THE WORLD'S BIGGEST SELLING AMIGA MAGAZINE

AMIGA FORMAT

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Get the best out of your Amiga: the experts show you the way!

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Don't worry: we can help!

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Every month, Amiga Format picks the best of the latest games and turns it into a demo for you to play. It's the best way to find out how good a game really is!



We tell you how to do it!
Combining the programs you need on the disk with the advice you want in the mag, we help you get the best out of your Amiga.

Test drive the serious stuff!



From Deluxe Paint IV to the newest word processor, we bring you demos of the top-name creativity software to try out.

PLUS useful utilities, complete PD games and more!

WHERE'S THE COVERDISK?
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BEST GAMES EVER: Sixteen games you have to have, and some are bargains!
GREAT GAME GUIDES: Top tips for Captain Planet, Bart Simpson, Lemmings
AMIGA ADVICE: Everything you could wish to know about your new Amiga
SOFTWARE HEAVEN: The low-down on what you can do as well as play games!

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CHECK OUT

TERMINATOR™ 2 JUDGMENT DAY







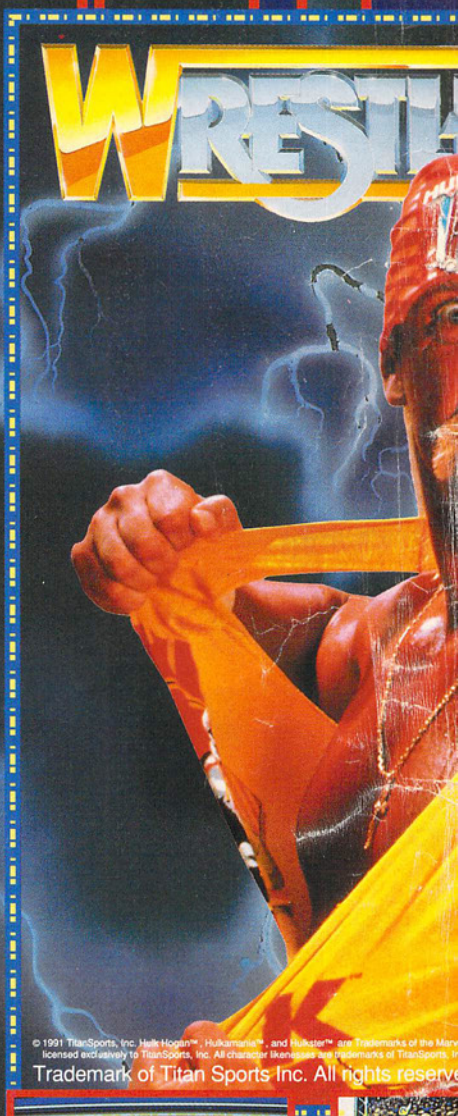


YOU ARE T-800

IN THE ACTION PACKED GAME-PLAY OF TERMINATOR 2, THE YEAR'S HIT MOVIE, AS IT EXPLODES ON TO YOUR COMPUTER SCREEN.
SPECTACULAR GRAPHICS AND FIERCE ANIMATION THROW YOU HEADLONG INTO THE FURIOUS STORYLINE OF THE BOX OFFICE SMASH....AND A GAME YOU WILL NEVER FORGET.

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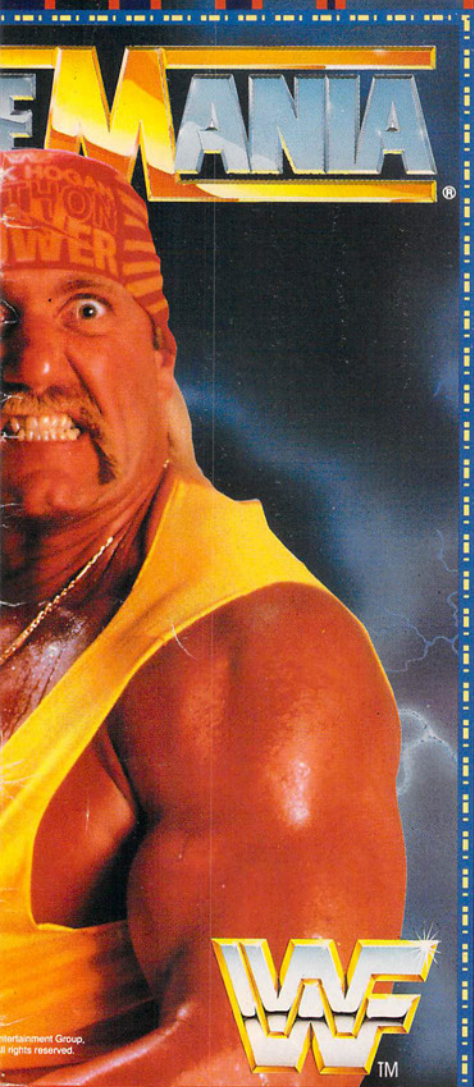




WATCHA GONN
LARGEST ARMS IN THE
RUN WILL

OCEAN SOFTWARE LIMITED · 6 CEN

THE ACTION





DO WHEN THE
ORLD AND HULKAMANIA™
ON YOU!?

RAL STREET · MANCHESTER · M2 5NS









Hello fellow humans!
Bartholomew J. Simpson here, with a very important secret:
SPACE MUTANTS ARE INVADING SPRINGFIELD
That's right man! A buncha slimy, horrible, totally gross and putrid monsters are taking over the bodies of the people who live here and they wanna build a weapon that's gonna take over the entire planet!
Anyway, yours truly is the only one who can see 'em! I've gotta spray-paint things, get radical on my skateboard, use my trusty slingshot, and in general behave like a nuisance, man.
So if your decent person a patriot, and somebody who cares about this sorry planet, you'll do the right thing.

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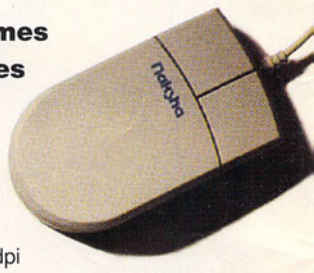
Atari/Amiga Handheld Scanner

Available for the Commodore Amiga and the Atari ST range of computers, the Naksha A500 Scanner features switchable resolution between 200 and 400dpi, 32 grey shades and adjustable contrast.

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Welcome to the Amiga...
Welcome to Amiga Format!

This Special Edition of Amiga Format, Britain's biggest and best-selling Amiga magazine, has been lovingly prepared just for you as your introduction to the wonderful world of the Amiga. We hope you enjoy it, that you find it useful and that you will read Amiga Format every month. But before the fun begins, here's a special letter from Stephen Franklin, Managing Director of Commodore UK...

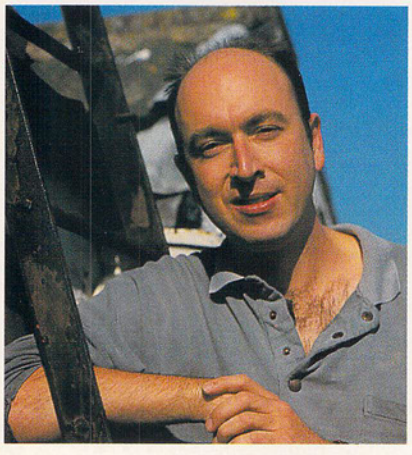


Dear Reader,

On behalf of Commodore, I am delighted to welcome you to the world of the Amiga, the UK's best home computer.
Undoubtedly the Amiga is the most exciting computer on the market today. It is in a class of its own in the home computer market - but that is only half of the Amiga's story.
In business, the Amiga is used to train Britain's air traffic controllers, as well as to teach top policemen the techniques of crowd control. Designers use Amiga for desktop publishing, animation houses rely on its graphics - even The Chart Show on ITV is based on the Amiga's ability to work with broadcast television.
Now the Amiga is poised to enter a new era in computing, using the power of the largest mass storage device yet devised for computing – the CD.
Doubtless one day it will be possible to buy magazines like Amiga Format on CD. But in the meantime, please read this edition which has been prepared specially for Commodore and accept the challenge offered by the UK's best home computer.

Your Sincerely,

Stephen Franklin
MANAGING DIRECTOR – COMMODORE UK



Hello, everyone!

My name's Damien, I'm the editor of Amiga Format and I'd just like to welcome you to this special edition of our magazine. Naturally you realise that you've just got your hands on the best home computer in the world, but did you know that you're now reading a copy of the best-selling Amiga magazine in the world? No? Well, you know now!

We're probably also the world's biggest Amiga fans. We reckon that the Amiga is excellent for playing games and we spend an awful lot of time doing just that: but we also reckon it's a waste of the most powerful machine around if you only play games. The Amiga can do so much besides: you can write letters or whole books, lay out the pages of a magazine, paint amazing pictures, make music, create animations, look after your bank account... the list goes on and on. This special edition of the magazine will give you a glimpse of the possibilities, but after that the only limit is you!

Best of luck and have fun!

Damien Noonan
EDITOR – AMIGA FORMAT



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From City Hall to the city streets. NOTHING HITS HARDER... Jessica has been kidnapped by the lawless Mad Gear Gang and Haggar, Mayor of Metro City, must face his Final Fight.

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Gauntlet III™

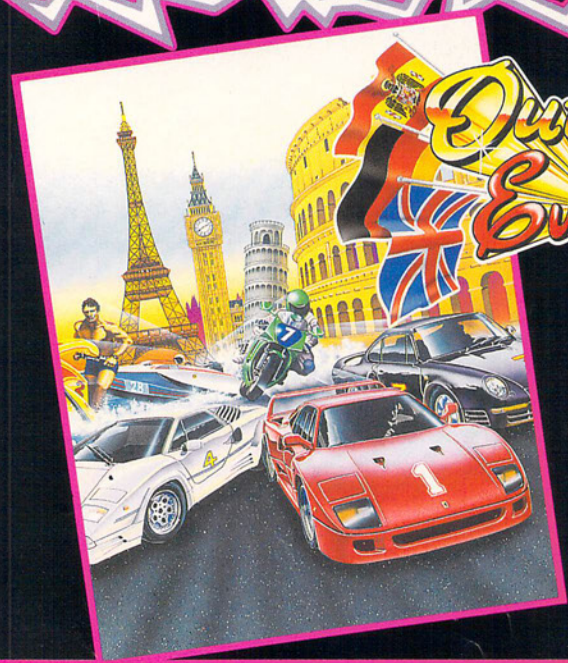
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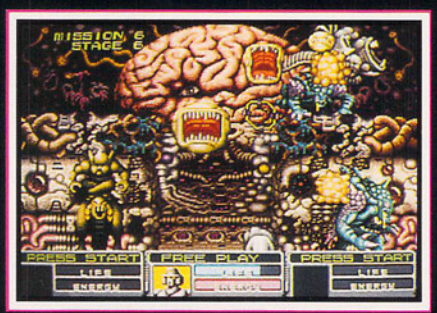
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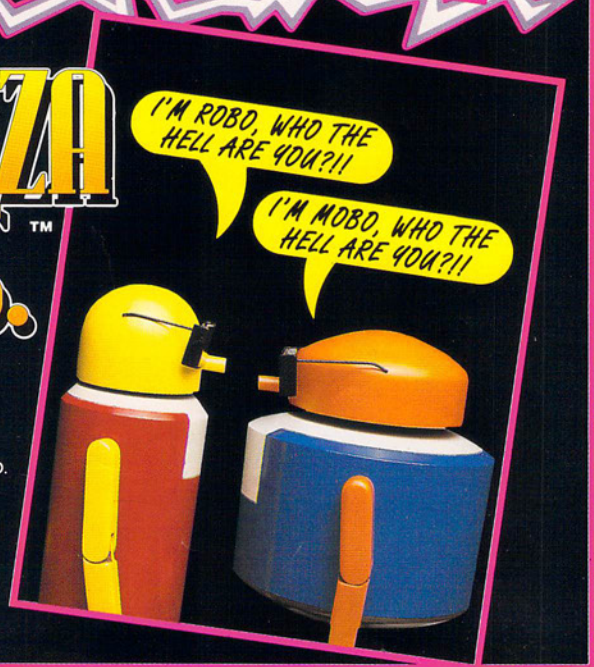
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GOLD®

Screen shots are only intended to be illustrative of the gameplay and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computers specification.

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Your new Amiga Inside and Out

Who are Paula, Agnus, Denise and the Guru? How does the Amiga work? Who designed it and why is it so different from ordinary computers? Find out on **p11**





Bring the noise!

Making music with your Amiga is surprisingly easy and incredibly enjoyable. Discover all you need to know on **p36**

Magical mystery tour

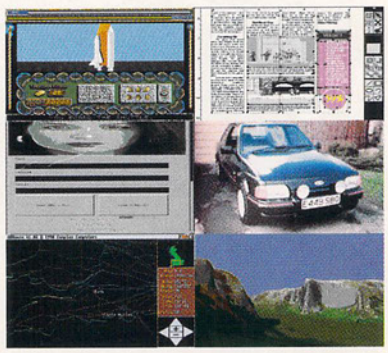
The Workbench disk that comes with your Amiga is the toolbox of the whole machine. For anything except games, you'll need to know your way around it: so take a guided tour starting out now from **p48**



Welcome to...
The wonder

Access all areas!

There are so many things your Amiga can do apart from play games. From the excitingly creative to the downright useful, we tell you what you can do and what you'll need to do it on **p34**





The games you have to have...

We've racked our brains to come up with our controversial choices for the best sixteen Amiga games of all time. What are they? Why have we chosen them? Are there others in with a chance? Check it out in **Screen Play** **p19**



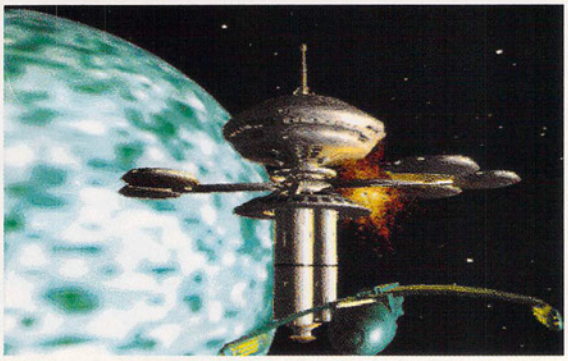
Getting into Graphics

If you want to know why this is the most exciting area of the Amiga, if you want to know how to get going with Deluxe Paint III, then turn now to **p30**

Making the Connection

You've got a powerful machine, but soon your feet will itch to tread the upgrade path. Learn all about what hardware you may need and what you should save up for **p40**





Something for nothing

Did you know you can buy great games, useful utilities and mind-blowing demos for just the price of a disk? Turn to **p44**

ful world of the Amiga!



Don't let it get you down!

Do your Lemmings keep throwing themselves off cliffs? Is Bart Simpson getting you into trouble? Are you having trouble saving the earth with Captain Planet? If so, you need the helping hand of **Gamebusters** **p25**





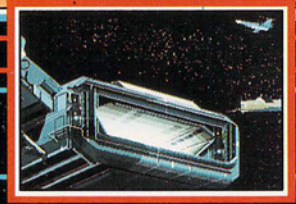
EPIC











T.V. SHOTS TAKEN FROM CBM AMIGA FORMAT.

EPIC - A LEGEND BEYOND TIME

A legend is born, a supremely advanced one-man starfighter of awesome power and destructive capabilities that, in the right hands will wreak havoc amongst inter-galactic transgressors - that legend is **EPIC**.

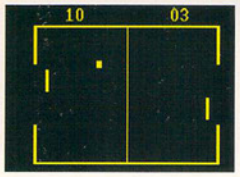
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A 3D 'epic' that reaches a milestone in polygon technology in terms of speed, graphical detail and pure out-and-out playability. A multitude of missions, ranging from devious to manic, take you deep into the heart of this sci-fi conquest of outer space. **EPIC** - a masterpiece of software engineering.

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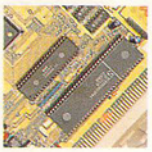
How do you start off trying to do this



and end up doing this?



Well, you need three Americans, one of these



and about three years doing a lot of this



You get carried away enough to add these



throw in an artist



and a pop star



simmer for a year or so and wind up with this...



...the best home computer in the world. **Probably.**

Your new Amiga Inside and Out

How much do you know about your new Amiga? Proving that the features in Amiga Format give you the whole story, here's the tale of how the Amiga was created, how it works, and **why it's so different... and so good!**

Silicon Valley, California, 1982. For the computer games industry, it was a time of change. The arcade machine market had hit a slump as people began to spend their money on home computers and consoles instead of playing coin-op machines in the arcades – and top of the best-sellers were the hugely successful games consoles. Jealously eyeing the money the consoles were coining in, everybody wanted to make a new console that could steal the sales.



One of the firms in the race was a small new outfit who called themselves Hi-Toro, soon to change their company name to Amiga. They had only $7 million capital, but they had a strong team: hardware expert Jay Miner, the man who'd designed the chips for Atari's VCS and 800 machines; marketing man Dave Morse, who'd learnt his trade with Tonka Toys; and software wizard RJ Mical, a top arcade game designer.

They planned to make the best games console ever, based around the brand-new Motorola 68000 chip, the first 16-bit processor. But while the development work went ahead the company made joysticks to cover the secret project. One of the weirdest joysticks was a surf board intended to control surfing games, and whenever the prototype console refused to work, the guys would try to relieve their frustration by sitting on the surf board and meditating, with the board

hooked up to a feedback program which would show how 'mellow' they were. Even now, when your Amiga crashes it's called a 'Guru meditation'.

Slowly, over the next two years, the machine began to emerge. With talent and creativity in abundance, the team lacked only two things: self-discipline and money. Every time they thought of something new they slapped it in, until they wound up with a prototype called Zorro which had accidentally developed into a whole lot more than a games console.

It had extra circuit boards and wires hanging out all over the place, it had a keyboard, a disk drive, printer connections... hell, it was a proper computer! And it was nearly finished. But the money had run out.

So close to success, they had to get some more cash from somewhere.



The Amiga is such a cool computer! Even rock group The B-52s are in the hardware. Do you know where?

At the Consumer Electronics Show in June 1984 they showed what they had in secret and people were impressed. They approached all the big-name computer firms, from Apple to Sony, and in the end it was Atari who gave them help and were close to buying them out. But then, at the last minute, Commodore jumped in with a juicy offer: and Amiga became Commodore-Amiga, an independent firm created with the sole purpose of finishing the special computer.

The first Amiga, the A1000, was launched at the Chicago CES in June 1985. Setting the tone for a unique machine, Debbie Harry, then lead singer of post-punk group Blondie, sang along to Amiga music and sat as a model for pictures by pop artist Andy Warhol, who loved the computer and used it up to his death in 1987. "The thing I like most about doing this kind of art on the Amiga is that it looks like my work," said Warhol, who would digitise faces and colour them brightly, just like his famous screen-prints of Marilyn Monroe.

Cult thang!

The Amiga 1000 was a square box with a separate keyboard and it was expensive at about £1000, but it soon became a cult machine with enthusiasts all over the world swapping information and the programs they'd written. Though it's now as popular as tea-bags the Amiga has never lost this cult feel, which lives on in the lively Public Domain and Demos scene (see Pages 44-5).

A year after the Amiga 1000, in 1985, the A500 was launched. Less than half the price of the original A1000 but technically superior, it was an affordable Amiga at last – but it had an early rival in the Atari ST,



You and Andy Warhol both: yes, the world's best-known artist had an Amiga, and he loved it.

which had narrowly beaten it as the first 16-bit computer on sale and was cheaper. Only gradually did the Amiga 500's technical superiority emerge.

Bizarre dudes

What makes the Amiga such a good machine? Mainly the bizarre creativity of the dudes who designed it. You can still catch the spirit of these guys in some of the little touches that crept in: for example, the Amiga has the name of a classic rock song etched on the circuit board: "B-52s Rock Lobster," it says. And right up until 1988 all Amiga 500s still had secret messages built into the operating system, which you could find only by pressing certain combinations of keys. But above all, it's the 'architecture' of the Amiga that is so unusual.



Anything that's been anywhere near punk queen Debbie Harry has to be worth getting your hands on...

The term architecture is used in computer design to describe the arrangement of the various silicon chips that make up the machine. Usually the key to this is the Central Processing Unit (or CPU), but the Amiga's CPU is a standard 68000 chip as used in other 16-bit machines including the Atari ST. But the Amiga is different. The Amiga has a set of 'custom chips'. Custom, in this case, means designed especially and only for the Amiga: all the circuitry on the Amiga's custom chips is the stuff that hung out of the Zorro prototype on separate boards, now crammed into a few tiny chips.

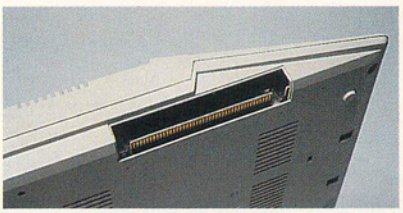
Setting up

What do

Here's everything

Power light
Shows when your machine is switched on. It can be controlled by software, so don't be surprised if it flashes sometimes!

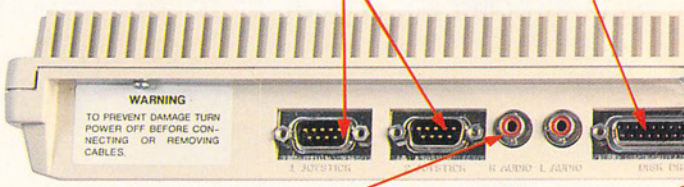
Drive light
Shows when the disk is being accessed (having something read from it or written to it). Never, ever remove a disk when this light is on. Some games leave the light on all the time, so listen to see if the drive is going round before you take the disk out.



Expansion slot
Flip off the plastic panel and you will reveal the connector onto which you can plug a hard drive or extra memory. See Pages 40-41 for more info.

JOYSTICK PORTS
Here you plug in your joysticks or your mouse. In one-player games, the joystick will usually need to be in Port 1. If you're using the mouse, you have to plug it into Port 2.

DISK DRIVE PORT
A special Amiga standard plug for attaching a second disk drive. See Pages 40-41 for more details.



AUDIO CONNECTORS
These take the sound out from the Amiga, one for each stereo channel, left and right. They're just like ordinary hi-fi plugs, so if you want to you can buy a lead and plug the Amiga to a hi-fi for real loud sounds!

SERIAL PORT
A standard computer interface, this is an RS-232 connector. You use it to plug in printers and modems. See Pages 40-41 for more details.

The best way to understand how the Amiga works is to follow what happens from the moment you switch on. First of all, power reaches all the chips so that they're ready to start working: but they won't do anything until they are told what to do. OK, ready for Step Number One...

1. KICKSTART

Preparing the system for action is the job of a chip called 'Kickstart', which is what's known as a ROM chip. ROM stands for Read-Only Memory: it's a chip that contains data, just the same way as a disk contains data: except that the data on the chip can only be read by the computer, and can never be wiped or replaced.

2. SELF-TEST

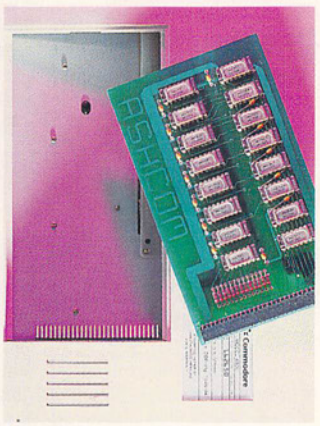
When you switch on, Kickstart first runs a few checks to make sure everything is working. You'll see the

your system

you plug in where, and what does what? you need to know about the Amiga 500...

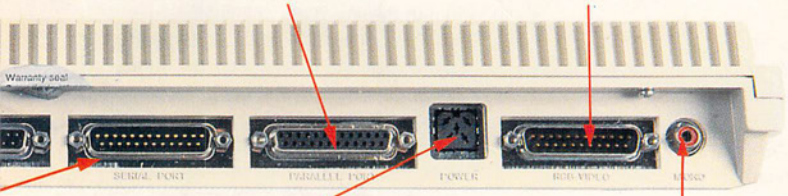


'Trapdoor' slot
Flip off the plastic cover and the hole inside is revealed. Inside you will find your A501 RAM expansion. It attaches with a plug that takes up the whole of one end, slotting onto a piece of the actual Amiga circuit board. If you want to remove it, slide it gently to the side to unplug it and drop it out.



PARALLEL PORT
Another standard computer interface, this is a Centronics connector. Use it to attach some printers and sound samplers. See Pages 40-41 for more details.

RGB VIDEO CONNECTOR
This is where you plug in a monitor (see Pages 40-41 for more details) or your TV modulator. Use an ordinary TV aerial cable to connect the TV modulator to your telly.



POWER SOCKET
The plug from your power supply goes in here. The Amiga 500 power supply is a separate 'brick', a bit like a Scalextric transformer, so you can put it on the floor if you want.

MONO VIDEO OUT
This is a special extra TV connector which gives a black-and-white signal only. Generally you won't ever find a use for it and you shouldn't use it.

TEN THINGS YOU HAVE TO KNOW ABOUT YOUR AMIGA...

1 Never unplug or plug in anything, not even a joystick, without switching the machine off first. You can blow one of the chips if a spark jumps.

2 Always make a copy (known as a 'back-up') of any disk that you can: put the original away and use the copy. This also applies to the Workbench disk. See Pages 48-51 for details of how to copy a disk. Remember that most games will be protected against copying.

3 If you have a game that you can't make a back-up copy of and it stops working, send the disk back to the manufacturers but keep the box and the manual. Don't try to do anything to make the disk work again. The firm will be happy to replace it.

4 Always write-protect a disk when you're using it, unless you have to save something to it. Move the plastic tab in the corner of the disk so that a hole is showing. When you're using a program like *Deluxe Paint,* save your pictures to a blank disk and not your *Deluxe Paint* disk.

5 Some games will not work with your A501 RAM expansion plugged in. If that's the case, remove it by taking the plastic cover off the 'trapdoor' slot under the Amiga, sliding the board gently sideways to unplug it, and dropping it out.

6 Watch out for viruses! These need cause you no worry if you follow two simple rules. If a disk is self-booting, like a game, simply switch off the Amiga for 30 seconds before and after you use it. This will prevent a virus from staying in the Amiga's memory. If you have non-booting disks (ones that need the Workbench disk) get into the habit of using a virus-checking program. See Pages 44-5 to find out how to get one of these practically free.

7 Don't ever switch off your Amiga, reset it or flip a disk out while the disk drive light is on. You'll certainly damage the data and you could damage the disk drive.

8 Fill in your warranty card and send it off. This will guarantee repairs for a year if anything goes wrong, plus other benefits. Don't take your Amiga apart: there's nothing you can repair and you'll invalidate your warranty. If something does go wrong, talk to the dealer who sold you the machine.

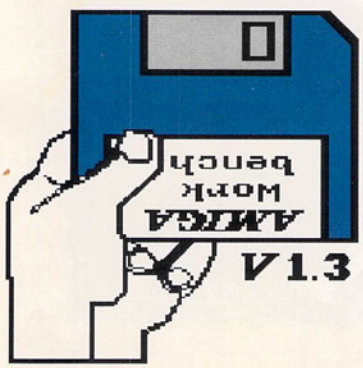
9 Never leave disks too near anything magnetic, including TVs and loudspeakers. A magnet wil wipe data off the disk.

10 Make sure to read *Amiga Format* every month! If you don't, you'll miss out on all the latest news and lots of useful info.

screen flash a couple of times, and end up white. If the screen ends up a different colour – say, red or green – it means that Kickstart has found something wrong and you should take your Amiga in to your dealer to get it looked at.

3. DISK DRIVE READY?

Kickstart also contains the basic AmigaDOS, which means Amiga Disk Operating System. After checking everything is OK, Kickstart loads the disk operating system and the disk drive is ready to have a disk put in. The Amiga shows that it's ready for a disk by putting a picture of a hand holding a disk onto the screen.



When the picture of a hand holding a disk appears on the screen, it means that the Amiga is ready and waiting for you to put a disk in the drive.

4. DISK TYPES

Disks come in two kinds: self-booting or not. If a disk is *not* self-booting, it means you have to put in the Workbench disk that came with your Amiga before you can use it. Most games are self-booting, whereas a majority of 'serious' programs are not. This is why your Workbench disk is so important – you'll need it to use a lot of programs. Turn to Page 48 to learn more about Workbench.

5. DISK BOOTING

Let's assume you put a self-booting game disk in. There is a portion at the start of the disk called a 'boot-block', which basically tells the disk drive that this is a self-booting disk. It also says how much data from the disk should now be loaded in and where on the disk that data is.

6. MEMORY

That data from the disk is now loaded into the Amiga's main memory, the RAM. RAM stands for Random Access Memory and is basically the main working area of the computer. The more of it you have, the more space your Amiga has to work in.

Because computer data is binary, made up entirely of ones and zeros, memory is measured according to how many ones or zeros you can fit in. Each one or zero is called a 'bit', and eight bits make a byte. 1,024 bytes is a Kilobyte, usually indicated by the letter K after a number: so an Amiga floppy disk, for instance, holds 880K. 1,024K is a Megabyte, usually abbreviated to Mb after a number: your new Amiga 500 has 1Mb. Clear?

The standard Amiga 500 has four RAM chips on the circuit board which give it 512K of RAM. You can add extra RAM chips on separate circuit boards up to a total of 8Mb. You already have an extra 512K on an A501 RAM expansion in the 'trapdoor' slot underneath your Amiga giving you a 1Mb total.

The main reason Commodore have decided to sell the Amiga with 1Mb of RAM in total nowadays is that for quite a while people have been writing games that can only be played if you have 1Mb or that have lots of extra sounds or pictures on an expanded Amiga. You won't ever need more than 1Mb for games, but if you get into graphics, particularly animation, you may well need to buy more memory to let you create more ambitious stuff. See 'Making the Connection' on Pages 40-41 for more advice on memory expansions and all kinds of hardware.

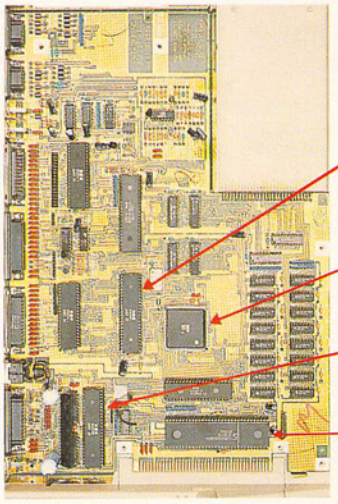
7. THE CPU

The main chip in the Amiga is the CPU, the central processing unit. Think of the Amiga as a car factory. The memory is the storage yard where raw materials like steel come in and are kept until needed, and the CPU is the factory workshop where the steel is made into cars.

The speed at which a car factory turns out cars depends on two things: how many you can build at one time, and how quickly you can build them. Similarly, the speed at which a computer runs depends on how much data the CPU can deal with at one time and how fast it deals with the data. The Amiga has a 16-bit CPU, which in effect means it can build 16 cars at a time: twice as many as the older 8-bit machines. It has a clock speed of 7.14 MegaHertz, which governs how fast it can build cars.

Phew! Sorry about the dumb car factory analogy: but after all this you should have some idea what it means when people say the Amiga is a 16-bit computer with a Megabyte of RAM.

INSIDE THE AMIGA



With the casing unscrewed and the keyboard removed, you can see how the circuit board fits in.

PAULA
This is the first of the custom chips, the one that handles sound.

AGNUS
The big fat chip that looks after graphics.

DENISE
Agnus's buddy, it also does graphics work.

MOTOROLA 68000
The heart of the machine, the CPU.

8. PROGRAMS

The CPU has a set of instructions built into it when it is designed which control everything the computer does: all a program has to do is to tell it which instruction to carry out when. So a program is simply a list of orders which the CPU has to do.

Remember, a computer doesn't really do anything more than you are aware of. The instructions which the CPU carries out are mainly what to draw on the screen and what to put out through the sound channels. The only other thing it does is store new data back in memory or onto disk, like the current score in a game or your picture in *Deluxe Paint*. That's really all there is to it.

9. CUSTOM CHIPS

The reason the Amiga is such a great computer is because it has the custom chips we mentioned earlier. There are three of these, and each one has a name: Paula, Agnus and Denise. The three custom chips are allowed to do something called Direct Memory Access, or DMA. This means that each one of them can nick some data out of RAM and do things with it without asking the CPU for permission. It also means, of course, that each has its own limited set of instructions, so a program can tell it what to do.

Agnus and Denise do mainly graphics work. Agnus is a big chip that also has two other bits in it: the Blitter, which makes putting a spaceship over a background, for example, much easier; and the Copper, which keeps a split-second track on scanlines. What's a scan-line? Well, the TV or monitor draws a picture on the screen starting from top left and scanning down line by line until it reaches bottom right. The Copper can suddenly interrupt the picture half-way down and draw something else, which is why when using Workbench you could open up *Deluxe Paint* and then pull the screen down so you can see Workbench again. The Copper also makes those lovely ranges of colour that you see in the sky on games like *Captain Planet™*.

Paula is the sound chip. The Amiga can produce a full nine octaves of notes in stereo, which is why game music is so good on the Amiga and why you ought to look at Page 36 to find out how much fun you can get out of making your own music.

It's because the custom chips are there that the Amiga can do something no other home computer can: multi-tasking. This means you can run more than one program at the same time, and it's just another example of the uniqueness of the Amiga.

GOOD LUCK!

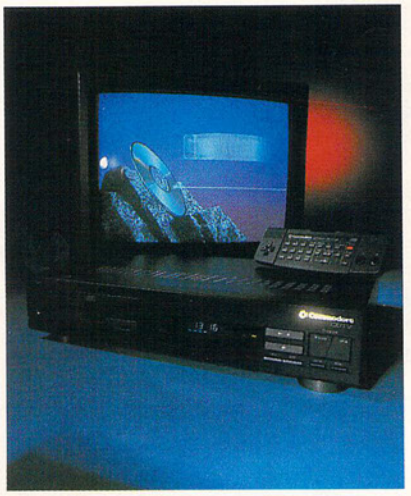
Well, after all that you should have a good idea of how the Amiga works. Now all you have to do is read on and find out about all the exciting things that it can do! If you get stuck playing any of the games you got with your Amiga, Gamebusters on Page 25 can help. And we've just got space to wish you the best of luck. Enjoy the rest of this special edition, have fun with your new machine... and read *Amiga Format* every month!

A look into the future...

The CDTV is basically an Amiga circuit board inside a smart, black case that looks like a video recorder. It's got no keyboard: instead, it's operated by an infra-red remote control. And, biggest diference of all, it's got no disk drive: because instead of floppy disks, it uses compact discs!

Compact discs normally come with music on, but that music is stored digitally – in binary – just the same way computer data is. So you can happily put Amiga software on CD. Better still, a CD can store the equivalent of over 600 floppy disks' worth of stuff.

Why are we telling you all this when you've just bought an Amiga? Well, you don't have to have a CDTV to get in on the compact disc revolution. Now Commodore have released an add-on CD-ROM drive for the Amiga, which will allow you to use any CDTV software that appears: and that's currently around 100 different titles. All kinds of stuff will soon be available on CD, from games like *Sim City* and *Xenon 2* (see ScreenPlay, Page 19) to atlases, encyclopaedias and even Karaoke-style sing-alongs! Keep an eye out for it!



This is the CDTV. It might not look like it, but it's actually an Amiga: and it is bringing the future of computing to us Amiga owners.

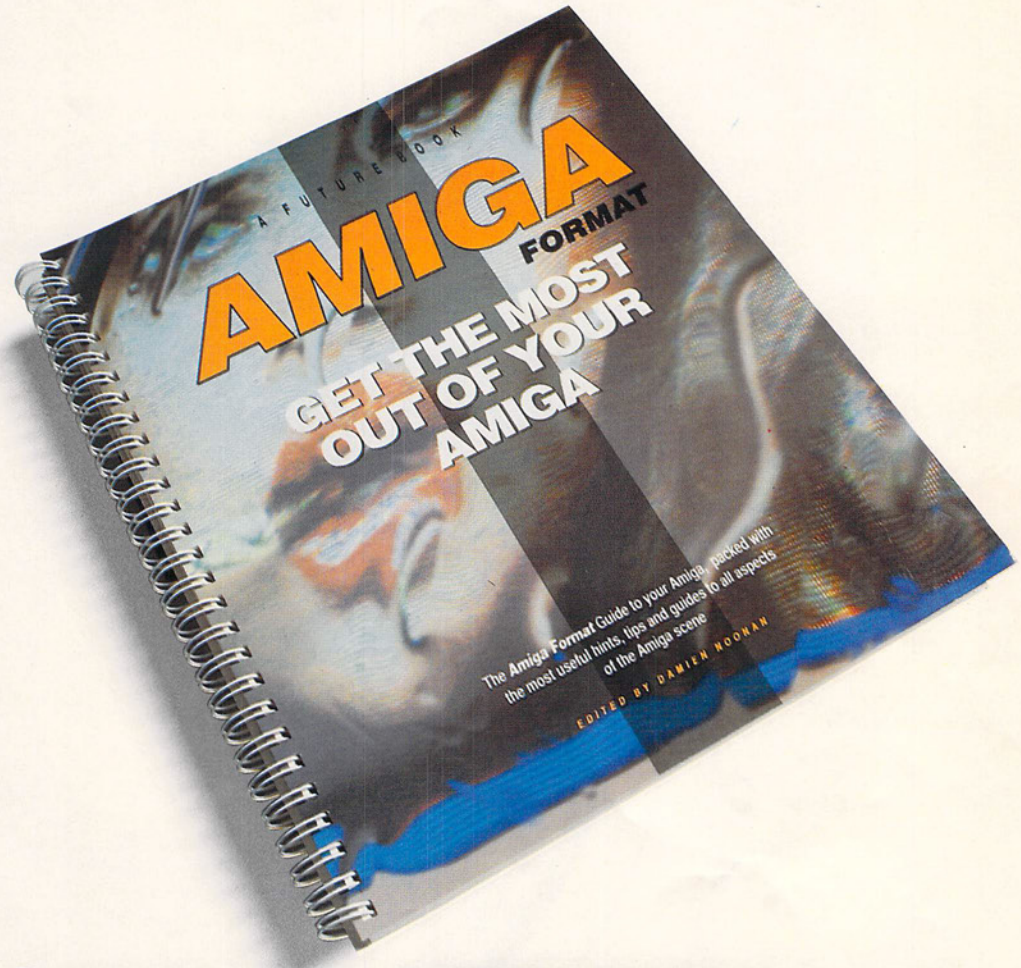
SPECIAL OFFER

If you have an Amiga, **You need this!**

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PLUS

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Put together by Editor **DAMIEN NOONAN** and costing £9.95, this book is the ideal guide for the beginner as well as containing stacks of advice for the more advanced user. You can't go wrong!

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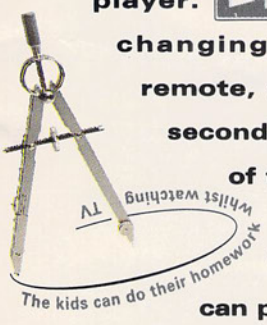
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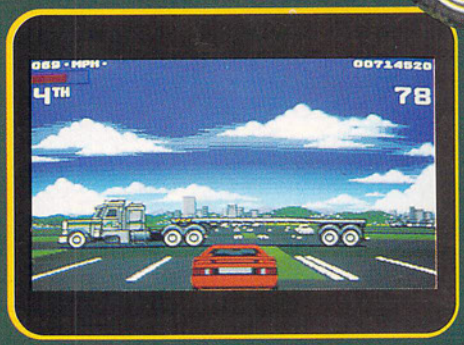
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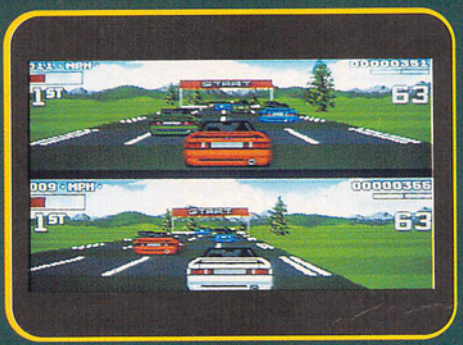


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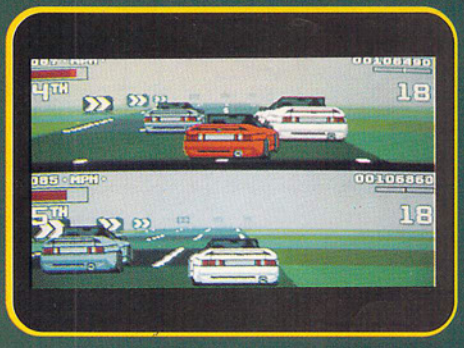
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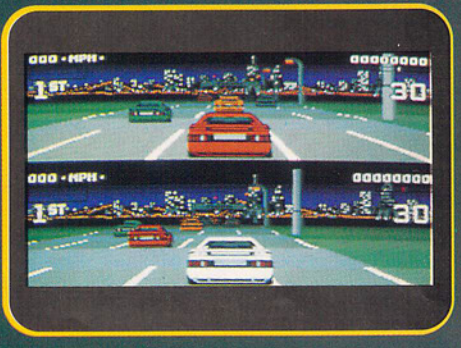
Srceen shots from various formats.











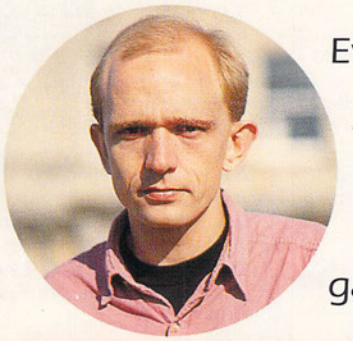
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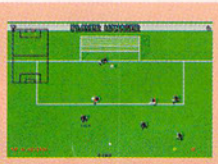
YOU'VE BOUGHT THE BEST MACHINE: NOW PLAY THE BEST GAMES!

SCREEN PLAY



Trenton Webb, Games Editor, deep-sea diver, Sixties cultural revivalist and obsessive games-player, is the man who keeps Screen Play jammed full of the best game reviews anywhere, every month.

Every month we play every game released and tell you what's worth buying and what to give a miss. But to get you started, here are our own highly controversial recommendations for the top Amiga games of all time: **the ones you have to have...**



KICK OFF 2

Fast, frantic and very, very wild. More than just the ultimate football game, it blends subtlety, strategy and true skill to give what we think is the best high-speed action ever.



LEMMINGS

Brain-bending puzzles, crossed with those cute little characters who almost come to life, make this one of the most original games of all time. Luckily, you have it already!



F-19 STEALTH FIGHTER

Flight simulations give you the real action feel of flying a plane, and we think this one perfectly matches the thrills and skills of real-life flying with the sheer enjoyment of a game.



SECRET OF MONKEY ISLAND

The closest you'll get to taking part in a movie – thanks to Lucasfilm, the folks who made *Star Wars!* It's a joke-filled cartoon pirate adventure packed with puzzles.



SPEEDBALL 2

Rollerball meets basketball in the 23rd century, it's vicious, violent and very, very good. Thumping sound, the sheer intensity of on-screen action keeps the adrenalin pumping.



POPULOUS

You're god of a whole world of people inside your screen, so slaughtering them or protecting them is truly satisfying! A unique combination of deep thought and swift action pulls you in.



STUNT CAR RACER

Rollercoaster drag racing brings you fast, exciting driving action, really made special by stomach-churning crashes as you tumble from the high-rise track or slam into your opponent.



PGA TOUR GOLF

Whether you love golf or loathe it, there's nothing to match the concentration and skill that this game will drag out of you. It's the perfect challenge, relaxing as well as thrilling.



PLOTTING

There's no other experience quite like a puzzle game, and this is a puzzler like no other. It's a tile-flinging race against the clock. Silly, maddening and totally addictive.



DAMOCLES

Can you save the Planet Eris from destruction in three hours? You'll be lost in the alternative reality of a three-dimensionally programmed world, seeking out clues and conspiracies.



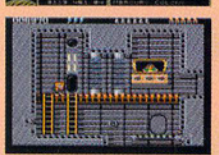
EYE OF THE BEHOLDER

Fantasy role-playing is as popular as ever, and this is its peak of computer perfection. Mazes and magic, dungeons and dragons, this is an epic escape from hum-drum reality.



DEUTEROS

Control mankind's space quest. Find the resources, research the designs and head for the stars. It's pure intellectual stimulation, testing your brainpower to the full.



RICK DANGEROUS 2

A cartoon challenge that's as funny as it is frighteningly tough. Manoeuvering over platforms and down ladders, you'll hit every kind of puzzle and problem ever created.



SPINDIZZY WORLDS

A spinning top goes walkabout in a land of trampolines and traps. It sounds stupid, but this is a game that tests mental and physical dexterity like no game ever has.



SWIV

Death and destruction in glorious stereo. A 'shoot-em-up' of apocalyptic proportions, it's the perfect two-player blast. We reckon it's the ultimate in sheer shooting power.



RAINBOW ISLANDS

The best Amiga game of all time? A perfect coin-op conversion, it's cute, colourful and crushingly playable. Filled to the brim with hidden extras that just keep you seeking more.

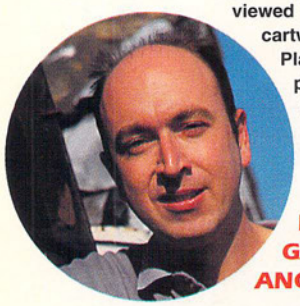
Want to argue? Got an all-time favourite that we've missed? Find out why we've picked these and what else fell at the last fence, starting over the page...



Unchallenged at the top of the league

Kick Off 2 ■ £25.53 ■ Anco ■ Joystick

Kick Off 2 is guaranteed to send friends into insult overdrive. It's football viewed from directly overhead, Goodyear blimp style, so the cartwheeling players look like superfast ants in footie kit. Played at speed in excess of 100 mph, it feels more like pinball than football first time out, but you quickly learn to trap, dribble and bend the ball. There are no pretenders to the Kick Off 2 crown, but the budget pack of *Kick Off 1* and the accompanying management game *Player Manager* for a bargain £7.99 comes nearest.



DAMIEN'S CHOICE: "IT'S A GAME OF TWO HALVES, THEN ANOTHER TWO HALVES, THEN..."

Puzzle trouble boils and bubbles...

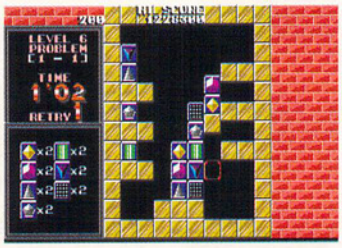
Plotting ■ Ocean ■ £25.53 ■ Joystick



Good puzzle games are rare, but the Amiga has several corkers, which made picking our fave a troublesome task. *Puzznic* (Ocean £24.99) looks similar to *Plotting*, but it's too easy for us super-critical types! *Pipemania* (Empire £24.99) is a crazy plumbing test, with mouse placed pieces guiding water around the screen. *Klax* (Domark £24.99) is an excellent mental juggling challenge, where multi-coloured tiles roll towards you and must be dropped into the right stacks at speed.



But *Plotting* bubbles to the top of our puzzle pot. A potato-like creature flings patterned tiles together so that matching ones disappear. The arena's enclosed so the tiles fly off of the roof, but missed throws mean Game Over. The clock ticks down as you try to clean out the level. Side by side two-player action and a level designer make this the ideal race against time and logic.



***Puzznic* is a classic puzzle game, but can it compete with *Plotting*?**

Nothing compares 2 U...

The Secret of Monkey Island £29.99 ■ US Gold ■ Mouse

Monkey Island easily takes the Oscar for Best Graphic Adventure, the kind of game that's like being in a film. Control your own cartoon in a romp through pirate history, guiding the hapless, hopeless, Guybrush Threepwood to the heart of Monkey Island's ghostly mystery. Just click on the screen to make him walk, talk and gawk. Excellent animation, crushing puns and witty wordplay provide both humour and gameplay. You won't want to finish, but you'll have to! It's the bizness.



There are, though, contenders. *Loom* (US Gold £24.99) is the direct predecessor of *Monkey Island* and has the same twisted humour, but it's that little bit too easy. *Indiana Jones and the Last Crusade* (US Gold £24.99) is another Lucasfilm movie, but can be annoying. *Future Wars* (Palace £24.99) and *Cruise for a Corpse* (US Gold £25.99) have a harder edge, but are still classics.



MAFF'S FAVE: "I LIKED IT SO MUCH I WENT OUT AND BOUGHT A PAIR OF RATHER STUPID PANTALOONS"

Fantasies battle it out

Eye of the Beholder ■ US Gold ■ £30.99 ■ Mouse



The thought of bashing Kobolds and Drow beneath a Forgotten Realms city should whet the appetite of any Advanced Dungeons and Dragons player, but there are several games engaged in combat in this arena. *Eye of the Beholder* is a massive game, packed with animated beasties, blood-curdling sound and totally perplexing puzzles. It also features the first implementation of the revised Version 2 rules. Using magic, wit and force of arms the party of six must destroy the evil Xanthiar deep in the dungeon. Easy to use, it's a swine to beat, but it has to be done. This one's a real all nighter. It takes after *Dungeon Master* (Imageworks £29.99) in a big way. Both use the same presentation and share the 'wander around a dungeon beating things up, treasure hunting, spell casting' theme. Advocates of each game claim theirs is best. *DM* was first but wasn't authentic Dungeons and Dragons. *EoB* is 100% real and was coded in 1991 – with all the associated benefits. Both are excellent, but *Eye of the Beholder* is better.



***Dungeon Master:* can it kill off *Eye of the Beholder* in combat?**

Stealth Fighter sneaks ahead in the dogfight for Top Gun

F-19 Stealth Fighter ■ £29.99 ■ MicroProse Mouse, Keyboard, Joystick or Analogue Joystick

The Amiga's blessed with an entire airforce of flight simulations, so it all depends on what, where and how you want to fly. *Falcon* (Mirrorsoft £29.99) was top gun until *F-19*, with excellent graphics and a friendly feel. *FA-18 Interceptor* (Electronic Arts) is real fun flying and is now available for only £9.99, but it looks a bit brutal. *MiG 29* (Domark £34.99) has the most accurate flight feel but lacks missions. *F-15 II* (MicroProse £34.99) is the shoot-em-down king, with the emphasis on action and massive attack. But our favourite of them all is still *F-19*. It's white knuckles all the way, with well-simulated flying and tense combat. Tourists can go city-spotting in four different war-zones, while war fans can just watch the fireworks. A cat-and-mouse test of radar avoidance and flying skill, *F-19* has the right stuff – have you?



***F15 II:* bags of combat action and destruction.**



***MiG 29:* the most accurate airplane game to date.**



In a flight sim, realism plus fun is the key: and *F-19 Stealth Fighter* has both.



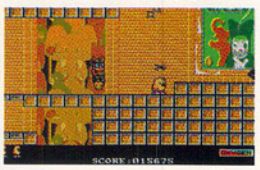
***Cruise for a Corpse, Loom* and the *Indy Jones* adventure are all contenders for *Monkey Island*'s top spot.**

Rainbow Islands wins out

Ocean ■ £19.99 ■ Joystick

Slap the disk in the drive, plug the joystick in and that's it, no argument, no choice, *Rainbow Islands* has its hooks in you. A perfect conversion of the coin-op, it's a trip into the ultra cute. Bub shoots rainbows to kill and trap the monsters that inhabit his rapidly flooding platform world. Jumping on his rainbows to reach higher platforms, Bub must keep one step ahead of the rising tide and turn the monsters into goodies. The playabilitly factor has been judged so perfectly that you progress without realising, slowly unlocking the secrets of these weird islands. It's stunningly large and fearfully addictive.

Rainbow Islands is gaming of the highest level, and the Amiga version's best of all. There's so much to do, so much to see, so much to learn. Fast, bright to the point of being garish and so, so playable. Luckily It's just been released in a compilation, the Rainbow Collection (Ocean £19.99), with the extremly sound *New Zealand Story* and *Bubble Bobble*. The recent hits *Rodland* (Storm £24.99) and *Magic Pockets* (Renegade £25.99) share this gameplay style and both are excellent games in their own right, but quite neither can match the mystery and sheer fun that *Rainbow Islands* offers.



Cuteness, fun, platforms. *New Zealand Story*...



...and *Magic Pockets* both take on *Rainbow Islands*.



***Rainbow Islands*, chosen by our sister mag *Amiga Power* as best game ever!**

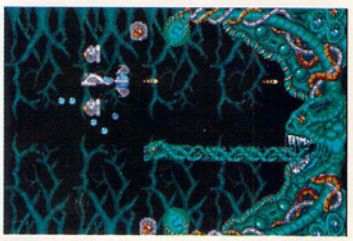
Death, mayhem and a war of three games...

SWIV ■ Storm ■ £25.53 ■ Joystick

The 'shoot-em-up' is the archetypal computer game: drive, fly or whizz along screen after screen killing lots of enemies. The Amiga, with all its custom hardware, should make an ideal blast machine, but is poorly served on the megadeath front. We looked back over the last three years and dismissed a number of big names, but our choice is a recent conversion from an arcade coin-op. *SWIV* is an up-the-screen, simultaneous two-player non-stop fire-power festival of destruction. The screen drips with atmosphere, enemies and bullets after the first few seconds and doesn't let up. Even with the built in auto-fire of the game, the trigger finger soon aches because of the extra pressure you subconsciously use to squeeze out extra shots. Drive a jeep or fly the chopper, both are explosive. Thunderous explosions rock the monitor in balanced stereo, beautifully textured graphics roll down the screen and 'the red coats keep a comin' thanks to a spiffy continual loading system.

Xenon 2 (re-released on the Mirror Image label at £9.99) and *Z-Out* (Rainbow Arts £24.99) are the other masters of disaster worth checking out. *Xenon 2* is still criticised for having a great soundtrack and too little gameplay. *Z-Out* looks exquisite and plays well for the first three levels, but gets unfeasibly difficult later.

Screen after screen, *SWIV* provides the kind of shooting mayhem that you need!



Absolutely standard but excellently done, *Z-Out* is a top blasting game.

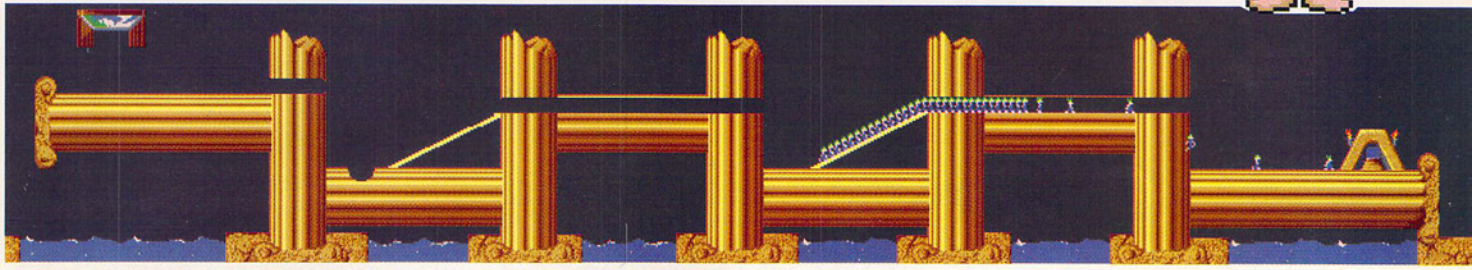
PAT'S TOP GAME: "SWIV IS THE ONLY THING WITH MORE VIOLENCE AND CHAOS THAN AN ANTHRAX SONG"

You've never seen anything like it!

Lemmings ■ £25.53, but you have it! ■ Psygnosis ■ Mouse



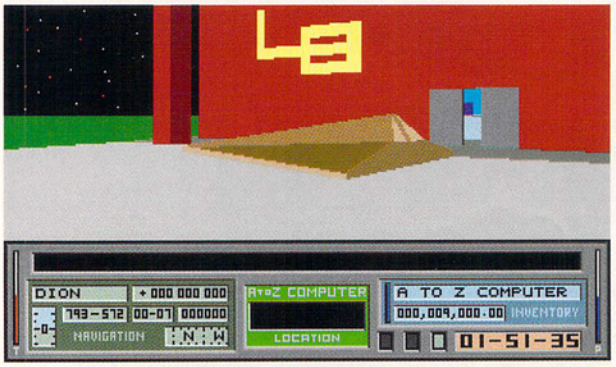
So cute they just have to be saved! Usher, cajole and trick 100s of little Lemming blighters to safety using eight basic commands. "Let's Go!" into the realms of fiery furnaces, deadly drops and lethal Lemming-traps. Panic as the clock counts down, curse at missed mouse clicks and laugh as you initiate the quit function – Lemming Armageddon – and the whole tribe goes up in nuclear smoke. *Lemmings* is a one off, a total original. Psygnosis are talking about *Lemmings 2* and data disk extra levels, but nothing's definite yet.



Do we really need to tell you how good *Lemmings* is? Go and try it yourself! And if you get stuck, you need the player's guide on Page 26...

Move in a new world...

Damocles ■ Novagen
£25.53 ■ Joystick or mouse



***Damocles* is an extraordinary adventure in an alternative world.**

"Flash, I love you, but we only have 13 hours to save the Earth." Well, actually it's the planet Eris you have to save, your name's not Flash and you're 10 hours late! A mad three-hour charge around a doomed planet is the setting for *Damocles.* Piloting skills, detective work and lateral thinking are essential if you're to save Eris from an incoming comet. A highly complex thriller, *Damocles* disguises its toughness under playability, which reels you in from the word go.

Space-based 3D games are a specialised taste but there are a few beauties to look out for. *Starglider II* is a space shoot-em-up cum sim – it was the first game to push 3D on the Amiga (now available in a great compilation from Elite with *Stunt Car Racer* and two other classics, *Carrier Command* and *Midwinter,* for a bargain £34.99). *Elite* (Firebird £24.99) is a huge space trading game, once very famous but too repetitive to be first choice nowadays. *Cybercon III* (US Gold £25.99) is the latest killer 3D game, a straight adventure in a 3D techno' dungeon where you battle a super computer.



***Cybercon III:* the very latest in a series of 3D Amiga classics.**

What you need is brains!

Deuteros
Activision ■ £25.99 ■ Mouse

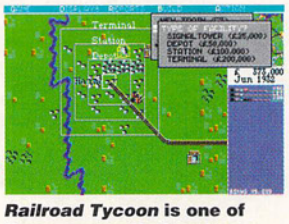


Logistics and a purely intellectual challenge should make a poor game, but proves absorbing: especially in *Deuteros,* the best game of this kind. The survivors of a wrecked earth far in the future must be guided on their voyage of discovery to the stars. A massive, continually evolving logistical puzzle, *Deuteros* delicately balances carrot and stick. The euphoria of solving a particular problem is suddenly dampened by the emergence of a larger menace. Dark, mysterious and full of threat, *Deuteros* has a surprise lying in wait behind every planet.

Deuteros' forerunner *Millennium 2.2* (Activision £24.99) is solid, if slightly short, but is hard to get hold of. *Railroad Tycoon* (Rainbird £24.99) lets you build, schedule and control an entire rail network in the heyday of steam. *Sim City* (Infogrames £24.99) sets you the task of controlling a city, its finances, growth and quality of life. All sound dull, but all are excellent.



TRENTON'S STAR GAME: "THERE'S NO BETTER WAY TO STRETCH YOUR BRAIN"



***Railroad Tycoon* is one of those games that makes a quick go turn into hours.**

Who's got the drop?

Rick Dangerous 2
■ Micro Style
■ £25.53 ■ Joystick

Platform games, where you control a little figure leaping and climbing up or dropping and clambering down are a classic game style, but few make the grade. *Gods* (Renegade £25.99) is one of the few. A glorious good looker with a classy alien intelligence routine, the game actually changes to suit your speed and ability. But we've never had so much sheer fun as with *Rick Dangerous.* A short, squat, cartoon figure leaps madly around platforms, dropping bombs, shooting foes and dodging traps with sheer 'stick speed. Loads of lives and generous restarts allow speedy progress through the mud, ice, wood and space worlds. As funny as it is tough, *RD2* is linked with great animations. Slickly presented and plays like a dream.

PAUL'S CHOICE: "THE ONLY THING THAT'S MORE FUN – AND MORE ENERGETIC – THAN RIDING A MOUNTAIN BIKE"





***Gods* is a great platform game, created by top programming team the Bitmap Brothers.**



Dropping down the levels into the underground world of *Rick Dangerous.* Layer on layer of fun!

Go green!

PGA Tour Golf
Electronic Arts ■ £29.99 ■ Mouse

A TV golf tournament on the Amiga, complete with hole fly-pasts, instant replays, tricky greens and bunkers galore. Take mouse control of a pro on the rounds. Check the line, read the wind, then use power, hook and slice to attack the pin. Guess the green's borrow and swing the ball towards the hole. It's just like real golf, only easier to play. Winning isn't a matter of one-off shots, but concentrated, continued form over four rounds. Anyone can play, few can win.

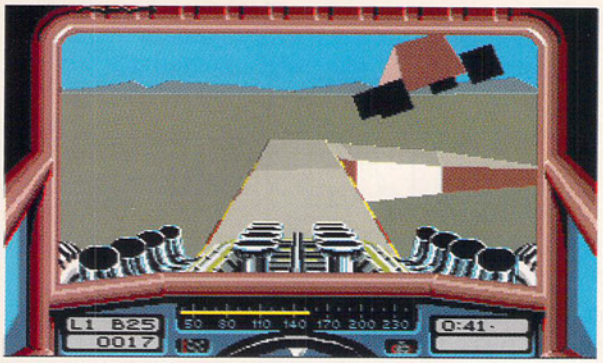
Precision games suit the Amiga, as the mouse allows pin-point placement of markers and sharp button clicks to control power. *World Class Leaderboard* (Kixx) is a top golf game, now on sale at a budget £7.99. Another 'touch' game worth checking out is *Jimmy White's Whirlwind Snooker* (Virgin £29.99), for fans of the green baize, it's the biz. Smooth, accurate, 3D allow *Jimmy White* to excell; it's the next best thing to hauling a real 12' by 6' snooker table into your computer room!

FRANK'S BEST PLAY: "BETTER THAN JIMI HENDRIX – NEARLY. THE BEST THING ABOUT IT IS WHEN YOU BEAT GARY"





GARY'S TOP GAME, TOO: "MARVELLOUS. THE BEST THING ABOUT IT IS BEATING FRANK"



Stunt Car Racer: **seems so real, the crashes hurt!**

Racing into the lead

Stunt Car Racer ■ £25.53 ■ MicroStyle ■ Joystick

Hurtling through the air after taking a jump, the car crashes into the circuit. Cracks appear in the roll cage, but you still hit the turbos, gunning for that fastest lap. That's *Stunt Car Racer,* brutal racing over 16 rollercoaster courses where the monitor's the windscreen. The elevated 3D track looks thin and the drop to either side feels fatal. Lunch loss is guaranteed. You can also play against your mate on two machines simultaneously via a modem link, which is a thrill like no other.

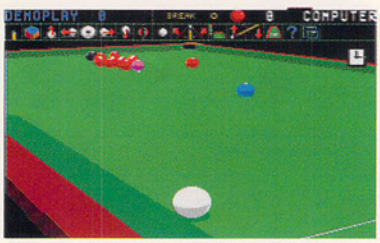
Indianapolis 500 (Electronic Arts £29.99) is an incredibly accurate 3D simulation of the American burn up. It runs in real time, so 200 mph really looks terrifying! *Lotus Turbo Challenge* II (Gremlin £25.99) is the best sprite based racer, with a cracking two and four player option you compete in an action packed sixty stage burn up across the 'States in fog, rain and snow.



Indianapolis 500 **majors on realism, with the kind of 3D system that flight sims use.**



Lotus Turbo Challenge II **is a racing game rather than a simulation. Lots of fun.**

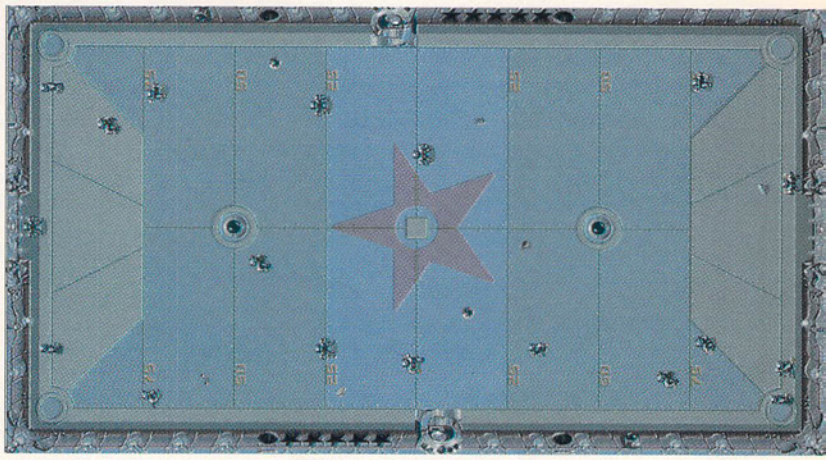


Jimmy White's Whirlwind Snooker: **more fun than golf?**

Winning through with violence

Speedball 2 ■ £25.53 ■ ImageWorks ■ Joystick

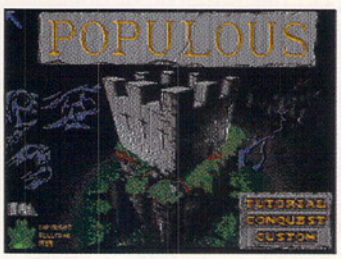
The game that broke Maff's wrist. It's a joystick-wrenching, sprite-cursing, goal-scoring, opponent-punching, viciously tactical sports game. Phenomenally fast overhead action is cast in futuristic silver and backed with excellent sounds. See a nine-man squad through a league season and into the First Division. Pump up players' stats in the management section, then punch their lights out during play. Sweet. *Speedball 2* only has one serious competitor for the top futuresport spot, and that's its slower, less frantic forerunner, *Speedball,* which retails for a tenner through the budget label Mirror Image.



Get points or get dead: bone-crunching brutality in *Speedball 2.*

So you want to play God, eh?

Populous ■ £25.53 ■ Electronic Arts ■ Mouse



A race of tiny folks worship you. Their sworn enemies worship other deities, so it's a fight to see who's the top god. Flatten land for your peeps, create earthquakes for theirs. The more prayers you get, the more power you get. Scroll around the isometric world watching the people pursue life, liberty and the Populous way. Easy controls, blistering gameplay and detailed animation make this an absorbing ego trip.

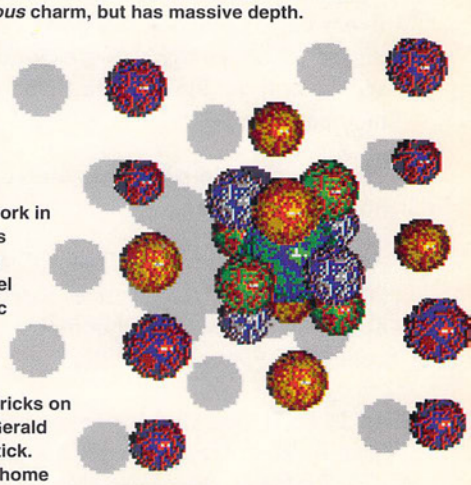
There are two games we reckon are nearly as good: and you can get one of them practically free, if you're buying *Populous! Sim City* (see 'What you need is brains') puts you in charge of building a city, and comes in a double-pack with *Populous* for just £29.99. *Powermonger* (Electronic Arts £29.99) is similar to *Populous* in presentation and playing style, but here you're a general who's seeking to control a nation split into 195 different pieces. An altogether bigger proposition, it lacks some of the *Populous* charm, but has massive depth.

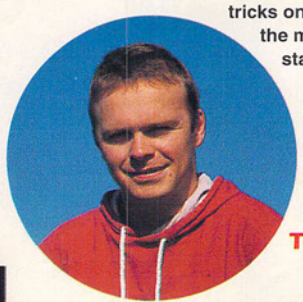
Spinning to the top

Spindizzy Worlds
Activision ■ £25.53
Joystick keyboard



Spindizzy Worlds demands – and gets – accurate joystick work in parallel with fevered lateral thinking. A spinning-top probe is sent to explore a series of insane worlds. You have to guide Gerald the probe in and out of trouble, collecting enough fuel to stay active. Routes have to found around the 3D isometric landscape to the most inaccessible places by using trampolines, jumps and sheer speed. The solutions are simple but never obvious. The strange perspective plays tricks on the eyes, the puzzles play tricks on the mind and surface on which Gerald stands plays tricks with the 'stick.





Spindizzy Worlds is a pure home computer game. It could not exist outside of silicon, and would not cut it in the arcades because it relies on pride not points to spur you on. It's a one-off – they broke the mould. All joystick hot dogs should give it a shot and see who's boss.

MARCUS'S ALL-TIME FAVOURITE: "A GAME THAT KEEPS YOU INDOORS ON A SUNNY DAY"

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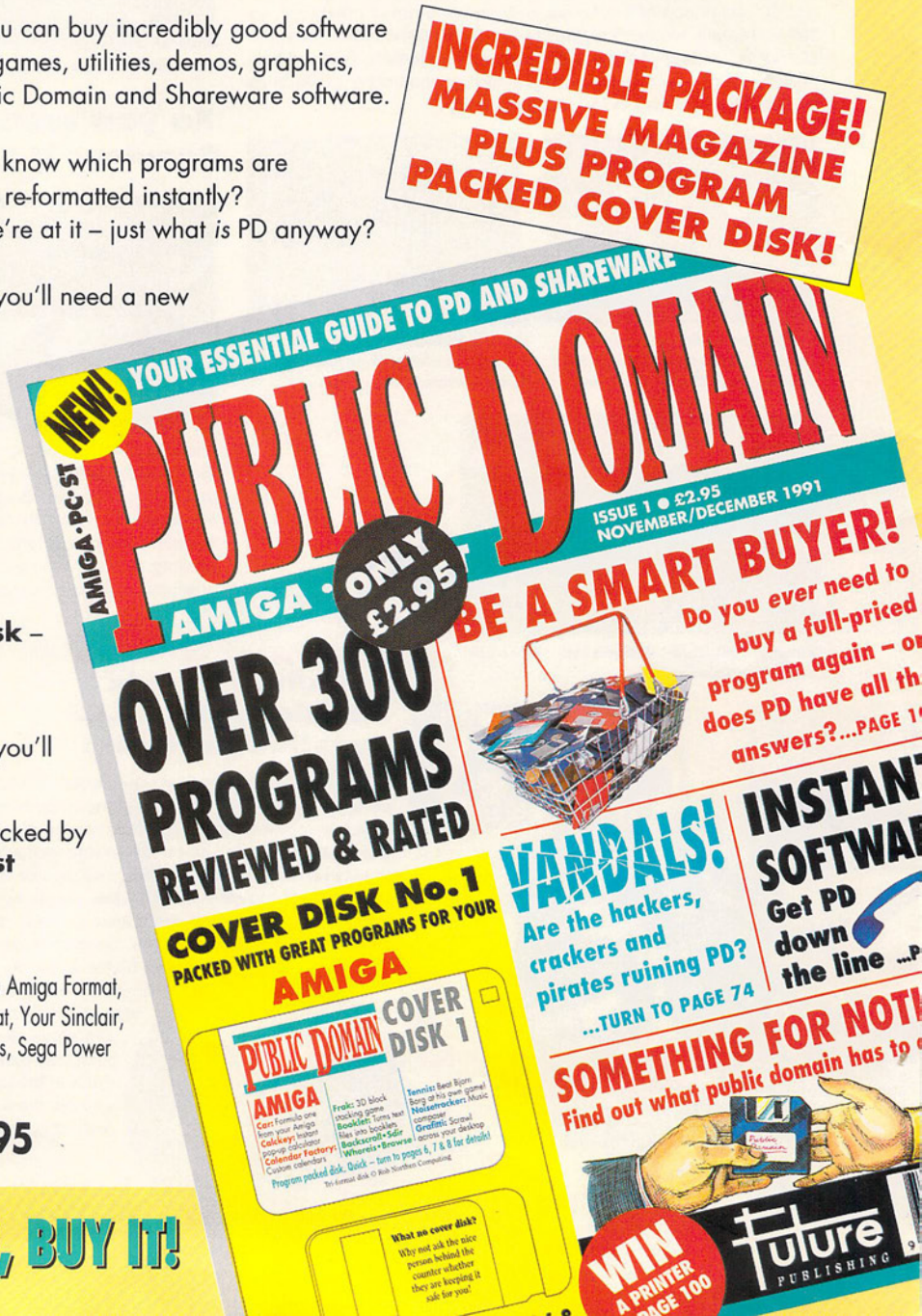
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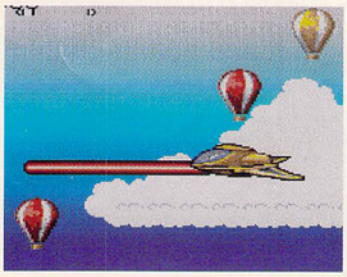
Maff Evans, mad musician and game fiend, is the guy who makes sure that Gamebusters is busting at the seams every month with the best advice for beating those games.

Gamebusters

So you've got a new Amiga and a handful of games, but you're finding the going gets tough. What can you do? Turn to Amiga Format's Gamebusters section, that's what! Get through that difficult game with our **high-quality hints, tips and cheats...**

CAPTAIN PLANET

When you're trying to save the Earth from ecological disaster, you've got a pretty big job on your hands! Never mind, though. Here are a few hints to help you battle the Eco-Villains™ along with Captain Planet™ and the Planeteers™ on the first few levels.



You must fly the Eco-Copter above the ozone layer destroying balloons that pollute the atmosphere.

FIRE LEVEL

Look out for hidden bonuses. Some seemingly solid walls will yield secret blocks when you jump at them.

Save yourself some repair work by catching the ozone-destroying waste that the balloons drop before it ever reaches the ozone layer.

Once you've repaired the ozone layer, keep nudging the seals to make sure they carry on walking to the exit.

WATER LEVEL

To free the dolphins you must create pools full of water for them. To do this, break the chains with blocks on the end to form a barrier. Don't release the chains with spikes on the end! They smash the platforms so that you can't make the pools.

Once you've broken the chain with the blocks, slide down the poles for a quick getaway.

The little yellow subs don't harm the canisters, so don't panic without reason.



Gi creates ice-platforms to reach the top of the towers and make pools for the dolphins.



Use the Power Ring to fire hearts and destroy the chemical-producing incinerators.

HEART LEVEL

Hitch a ride with the birds to get yourself up to the higher platforms, but make sure they're not carrying a nasty creature before you get on – it could be painful!

Creatures shrink trees if they're dropped onto them, so you may have to give the poor old trees a quick-growing refresh to cure them once you've killed the enemy.

THERE'S MONEY TO BE WON!

If you come up with tips good enough to be published in Amiga Format, then they could earn you a £50 Mail Order voucher. Just jot them down and send them in to GAMEBUSTERS, Amiga Format, 30 Monmouth Street, Bath BA1 2BW.

If, on the other hand, there is a game you would like some help on we can try to offer assistance. Send any pleas for help to Helping Hand at the above address and we'll see what we can do. If you come up with the answer to another reader's query, then you could win £25!

Bart Simpson versus the Spaceman

Bart Simpson may be a hip and cool dude, but when you go sailing into aliens time after time you may not be feeling all that hip and cool. Never mind! Here are some hints to help you through the game.



- Collect all the gold coins you can find to use on the sideshows on Level Three. If you collect fifteen you can buy an extra life with five of them.
- Jump on the grass where you are told not to and a purple policeman will appear. Spray him then run like blazes!
- If you arrive at the Springfield retirement home and find yourself short of rockets, then stand in front of the doors and use the key (which can be bought from Tool World). You will then be warped back to a house near Mo's Tavern, so you can buy yourself some more rockets.
- If you miss one or two purple objects on the first level, then simply go to the Springfield Cinema and wait for the counter to reach 400 or 200. A purple person will emerge at both times for you to spray, bringing the total down.
- There are lots of bonuses hidden throughout the mall level. To find them jump on the bins several times.
- If you are finding the 'Sweet Platforms' a little difficult on the second level, you will be glad to know that Bart can create a special effect to sail past the obstacle.
- At the power plant, save time by giving the fuel rods to Marge. To do this, just touch her as she walks past. She will then take the rods to the basement.





Climbers



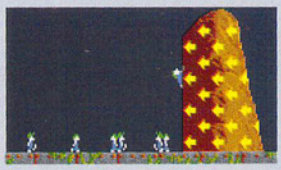
These little fellows will happily shin their way up any vertical surface, but they will drop down if they reach an overhang. They are especially useful if you want to get a single Lemming over an obstacle so that he can pave the way to the exit and let the others follow him through.

IF YOU HAVE NONE: The only alternative is to build bridges to reach the top of an obstacle. This means that the others will all follow, unless you block them before they reach the top.
THINGS TO WATCH: Climbers will scale any obstacle they come to, so make sure they don't waltz off the end of a long drop! You can turn them into Athletes by making them Floaters. They will still climb, but they can fall without hurting themselves.



EXAMPLE LEVEL: OJHLDMCCES

One-way obstacles, shown by big arrows, are a prime example of a position that requires a Climber or two. Send them over, turn them around and Bash through the obstacle in the right direction.



Floaters



Lemmings are usually pretty sturdy creatures, but if they fall too far they tend to get squished. The only way a Lemming can survive a long drop is by being made into a Floater. He will then produce an umbrella parachute and drift safely down to the floor below.

IF YOU HAVE NONE: To ensure that a stream of Lemmings don't splat on the ground, you'll have to build a platform of bridges beneath them. This will reduce the drop height and catch them.
THINGS TO WATCH: Even if a Lemming is a Floater or an Athlete, if he falls into water or lava or drops off the bottom of the screen he will be killed. Make sure Athletes don't wander off after surviving a long fall only to be caught in a more devious trap.

EXAMPLE LEVEL: OCGNLLGHFN

On this level, most of the Lemmings will die – sob! Make one a Floater and then get him to Bash and Build to the exit. Then make a bunch at the end into Floaters to follow him through to safety.



How to Save the Lemmings

A trapdoor opens in the sky and those cute little green-haired chaps come tumbling down. Left to themselves, they'll happily wander off the nearest cliff to their doom: but you have to save them! Here's how...



You need to know this

First step: learn how the game works. To save the Lemmings, you have to pick out individuals and make them do a particular job. You do this by clicking on one of the icons at the bottom of the screen and then clicking on one of the Lemmings. (A quick explanation for beginners: 'clicking' means moving the mouse so that the moving pointer on the screen is over what you want, then pressing the left mouse button once, while an 'icon' is a little picture that, when you click on it, makes something happen).

For instance, the first thing you're likely to need to do is stop them all walking straight off the nearest cliff to their doom. So you'd click on the 'Blocker' icon and click on the Lemming in the lead. Now you've given him a job as a Blocker, he'll stand there with his arms outstretched and no-one will be able to pass him.



Your aim is to guide the Lemmings safely to the door at the end of the level. By making different Lemmings do different jobs – digging through and climbing over obstacles, bridging gaps – you can get most of them there. You can't always rescue them all: but don't worry, you don't need to. You're told a percentage that you have to save at the start of each level.

The big problem...

Yep, there's a problem. Each little icon that you click to make a Lemming do a particular job can only be used a certain number of times on one level: there's a number on it that counts down each time you use it. A few levels in, you'll suddenly discover you just don't have a certain kind of Lemming that you think you'll need. What do you do? Easy! Read on...

...and how we can help

What we've done on these two pages is describe in detail how each kind of Lemming does his job, and what to do if you don't have any of a particular kind available to you. We've also named an example level where you will come across each kind of problem, and a code to help you jump to that level so that you can practice. Use the level code by clicking on 'New Level' on the first screen of the game and typing the code on the keyboard. It's easy!



Bombers



Even though it sounds a mite sadistic, there are times where you will need to blow up the odd Lemming. Using a Bomber is the usual way of destroying a Blocker, but they can also be dead useful for blasting through barriers when there are no Bashers or Diggers.

IF YOU HAVE NONE: If you need to get past a Blocker before the end of a level, you may have to Build bridges over him in order to lead the blocked Lemmings out to safety.
THINGS TO WATCH: When you make a Lemming a Bomber there is a five-second delay before he explodes. Take this into account when you are working out his bombing position. If possible it may be an idea to make him a Blocker before blowing him up.

EXAMPLE LEVEL: DICIKNMOEM

Some careful timing is needed for this. Set the Bombers' countdowns at the right time for a series of Lemmings to break through the lattice covering the exit.



Blockers



This is one of the most frequently used and important jobs you can give a Lemming. Blockers stop streams of Lemmings in their tracks, preventing them from dropping off platforms and allowing you to send out a single 'scout' Lemming to set up a path to the exit.

IF YOU HAVE NONE: This is where things start to get tricky. Not having Blockers takes some pretty nifty manoeuvring. See 'The single most useful piece of advice...' for really handy tips!
THINGS TO WATCH: Once a Blocker has been placed the usual way to get rid of him is to blow him up, but there are more devious methods. If you get a Miner to hit him with a pick-axe or dig the ground away from under him, he will just walk away.

EXAMPLE LEVEL: CINNLDLICJ

This level is a lot simpler than it seems. Just set the first Lemming to emerge as a Blocker and the rest will hit him and turn towards the exit to escape.





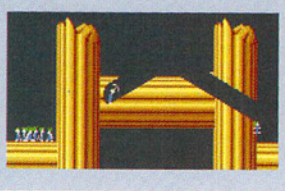
Miners

As well as Bashers and Diggers, there are also Miners to dig through pieces of scenery. These chaps are basically a combination of the other two burrowing Lemmings and are best used when you want to dig a ramp-like tunnel at an angle through an obstacle.

IF YOU HAVE NONE: Since Miners are a combination of Bashers and Diggers, one alternative is to use them both to build a series of steps. You could also use Bombers to blast a path through.
THINGS TO WATCH: Sometimes it's hard to judge exactly where a Miner will emerge. Make sure that you remember his starting point, so if you make a mistake and he ends up in the wrong place, you'll know where he should begin on the second attempt.

EXAMPLE LEVEL HMGMCMOMFU

Send Climbers over and make them Miners to tunnel through all the columns so that the rest can escape. Make sure the ramps head in the right direction!





Diggers

Like a hyperactive puppy, Diggers stop and dig straight down, forming a vertical shaft down which the other lemmings fall. This is useful if you want to break through a platform or piece of scenery and lead the Lemmings to another section of the level directly below.

IF YOU HAVE NONE: This is pretty tricky, taking some pretty nifty timing. You will have to use a combination of Bashers, Miners and Bridge Builders to form a near-vertical tunnel.
THINGS TO WATCH: Since Diggers burrow straight down, you'll need to watch out that the rest of the Lemmings don't fall down the shaft only to splat on the floor below! Combining Diggers and Bridge Builders also makes an alternative to using Blockers.

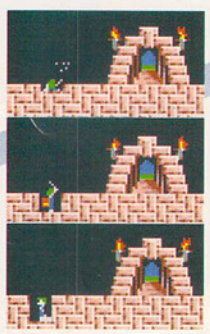
EXAMPLE LEVEL CMOLMFNQDK

Starting at the right-hand end, make each Lemming a Digger so that they can all drop safely through to the platform below and walk along to the exit.



The single most useful piece of advice for Lemmings ever...

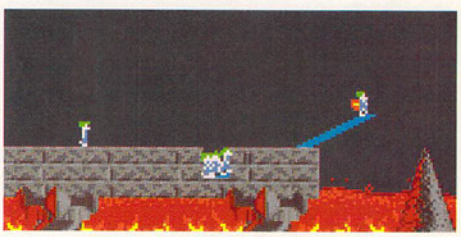
Using Blockers is taken for granted for most of the game, but problems begin to arise later on due to the fact that you are not given any! This makes holding back the flood of Lemmings and turning around to set up paths more difficult than usual. However there are a couple of methods you can employ to overcome this problem. Building a bridge into an obstacle is one way, but what about on a flat surface?



1 To begin with, you need to get one Lemming forward, away from the rest of the pack (usually by making him climb a wall), and then make him into a Digger. He will then start to burrow straight down, making a small hollow in the flat piece of ground he is walking on at the time.

2 Next, stop him from digging by turning him into a Bridge Builder. He will then build into the side of the dip. When he hits the wall he will stop building, then turn around and face in the opposite direction, ready to start walking the other way.

3 Finally, the Lemming will walk off in the other direction. If the hollow is too deep for him to walk out of, then make him into a Climber to scale the wall, but keep an eye on him when he escapes, otherwise he may have a nasty fall.



The same method can be used for holding back Lemmings. Just make the pit deeper than normal and build a bridge out of the hole when you want to release them.

Lemming Armageddon Megadeath



What? A nuclear holocaust in a cutesy puzzle game? Yes, I'm afraid so. However, the Lemming Armageddon is only usually used as a last resort when the level has gone wrong beyond all repair. It turns all the Lemmings into Bombers, causing their little bodies to explode in a spectacular – yet sadly poignant – pyrotechnic extravaganza.

Lemming Armageddon does have an alternative use, though. If there is a level where you have placed a lot of Blockers, but have no Bombers to get rid of them after the others have reached the exit, just nuke the lot of 'em. This will have the same effect as bombing them individually.





Bridge Builders

Builders, as you will discover, are extremely useful fellows. Their primary use is to bridge across great big gaps in the ground or build ramps up to higher platforms, but they can also be used sneakily to turn Lemmings around, delay them, or make rescue platforms.

IF YOU HAVE NONE: Not having any Bridge Builders will cause problems! You may be able to rescue the situation by bashing through or tunnelling past obstacles to reach the exit.

THINGS TO WATCH: A Builder only builds a certain amount, so if you need a big bridge listen out for the clanking noise that sounds as he places the last three tiles. He will shrug his shoulders and walk on, so quickly make him a builder again and he'll carry on.

EXAMPLE LEVEL: LICKKNNGEP

Use a Blocker at the beginning of this level to allow a single Lemming to build bridges over all the gaps, then build a bridge over the Blocker to allow the others to walk to the exit.





Bashers

These are the hard men of the troop! If you make a Lemming a Basher close to any non-metallic obstacle, he will smash a horizontal tunnel through until he reaches the other side. Once he breaks through he will turn back into a normal walking Lemming once more.

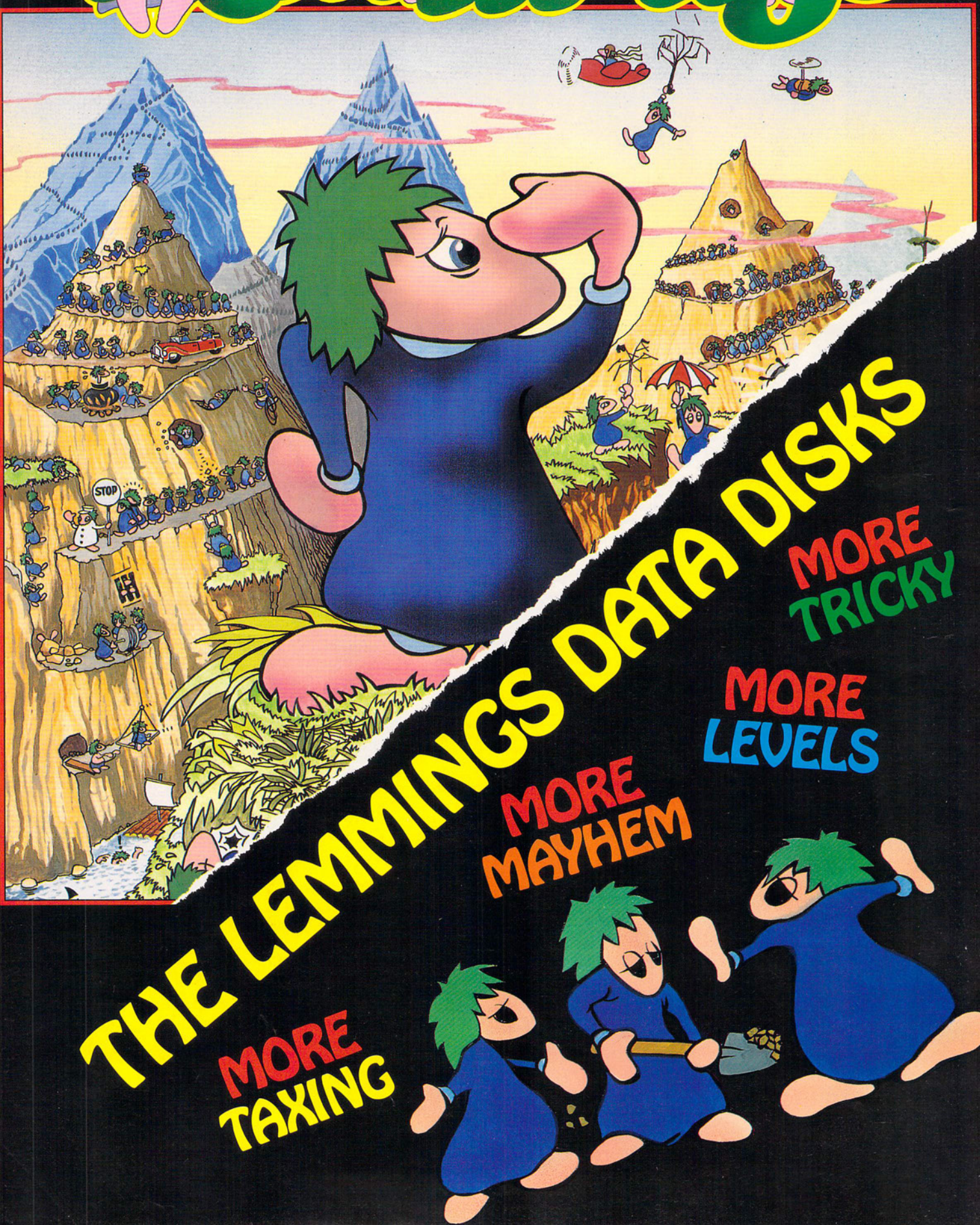
IF YOU HAVE NONE: You may be able to use a miner to dig diagonal tunnels through a barrier, but if this is impractical you will need to build bridges over the obstacle instead.
THINGS TO WATCH: To get a Lemming to become a Basher, you need to click on him just as he reaches the obstacle, otherwise he will bash once at thin air and think that he is through the blockage, so he'll walk on, reach the obstacle and turn around.

EXAMPLE LEVEL: MGMCEKMNFO

Use a Blocker to allow one Lemming to burrow under the columns and bash a tunnel to the far end of the platform. Then build bridges to the exit and free the other Lemmings.



Lemmings™



THE LEMMINGS DATA DISKS

MORE TRICKY

MORE LEVELS

MORE MAYHEM

MORE TAXING

Psygnosis World Tour

Shadow of the Beast II	Aug. '90	European Computer Leisure Award for best graphics & best sound
The Killing Game Show	Sept. '90	89% - Zzap
Spellbound	Oct. '90	79% - ST Format
Carthage	Sept. '90	88% - Amiga User
Awesome	Nov. '90	900 - ACE rated
Obitus	Dec. '90	830 - ACE
Lemmings	Feb. '91	94% - CU Amiga
Monster Pack	April '91	Three Game Value Pack
Armour Geddon	April '91	90% - ST Action
Atomino	May '91	93% - Zzap Sizzler
Amnios	Oct. '91	93% - Amiga Action
Lemmings Data Disk	Nov. '91	
Barbarian II	Oct. '91	
Aquaventura	Nov. '91	
Leander	Nov. '91	
Ork	Nov. '91	
Air-Support	Dec. '91	
Agony	Dec. '91	
Nitro	Oct. '91	



More dates to be announced . . .

Starting out with 64

How Deluxe Paint III delivers the goods



***Deluxe Paint III* is the business for painting in up to 64 colours.**

Deluxe Paint III is simply the business, so good that games programmers use it to create their graphics. The Amiga has six built-in 'graphics modes' but the last one is a bit of a cheat: *Deluxe Paint* uses all the other five so well that there *is* no other paint program unless you want to use that sixth graphics mode: on which, more below!

Our tips on using *Deluxe Paint III* should tell you everything else you need to know, so let's look at those five graphics modes. *Low Resolution* gives you a screen 320 pixels wide and 256 pixels high, using 2, 4, 8, 16 or 32 colours. *Interlace* doubles the vertical resolution to 512 pixels high, still with up to 32 colours, but the picture flickers. *Medium Resolution* has twice the horizontal detail at 640 by 256, while High Resolution doubles the vertical too, giving a resolution of 640 pixels by 512 pixels down: but both can only use 16 colours at most. Finally there's *Extra Half Brite* (EHB) which gives you an extra 32 colours of half the brightness of the first 32 – a total of 64 colours. Now read on!

Move on up to 4096

Get the max with even more colour!



Now there's *Deluxe Paint IV,* which lets you use all 4,096 colours.

That mysterious sixth graphics mode is a thing called HAM, which means Hold and Modify. It's a programming swindle which lets you paint with 4,096 colours on one picture. This pays off no end in realism, but it does cause a problem. Obviously you can't put all 4,096 colours on a picture one at a time, so the emphasis with a HAM paint program is on tools to put blends and mixtures of colours on for you. Now for some more good news for you lucky people. Until recently, there were several good HAM paint programs on sale, but no really great ones. Now *Deluxe Paint IV* is available. It uses HAM, it's very good indeed, and you can get it, by trading in your *Deluxe Paint III,* for the reduced price of £45. Details from Electronic Arts 0753 549442.

The ultimate realism

True Colour gives photographic quality



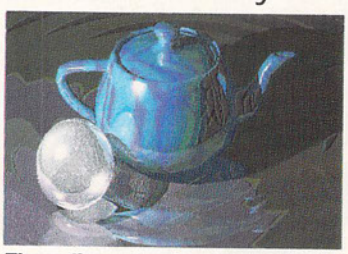
OK, so you might not mistake it for a photograph: but it's not far off.

The very latest in graphics for the Amiga is a thing called 'True Colour'. This involves plugging in a big extra circuit board, so you can only do it on an Amiga 2000. It's very expensive and only for real experts: but we thought you'd be interested to know that the Amiga is still at the forefront of the computer graphics scene!

True Colour allows you to use as many colours as you want from a palette of over 16 million! In fact, even if you make every single pixel on the screen a different colour you can still only fit about 327,000 different colours on there, but this lets you use as many colours as there are in nature: it's as realistic as the best photograph!

Or make a model...

You can actually build a picture in 3D



Three-dimensional graphics can create natural light and shadow.

There's another way of making very realistic pictures that only uses the Amiga's standard 4,096 colours, and that's building them as a 3D model. A 'wireframe' picture on the screen allows you to create shapes which you then 'render'. This process involves a lot of very complicated mathematics which some dead clever programmers worked out, but all it means to you is sitting for literally hours while the Amiga does the work. At the end you have a picture in which all the reflections and shadows caused by light rays are reproduced very accurately. It's not a field for beginners because you need a lot of hardware, but you'll see many a 'ray-traced' 3D picture around.

MAKE YOUR OWN ANIMATIONS:

Possibly *Deluxe Paint III's* most powerful and most exciting feature is its animation. With this feature you can create virtually any kind of animation you wish, from cartoons to fancy titles and effects for your own videos.

Animations can be constructed in two ways. You can either draw each frame individually, which is the hard way of doing it, or pick up part of the screen as a custom brush



The wond

You're very lucky people. You've got a software for creating your own pictures:

TAKE CONTROL OF DELUXE PAINT:

DOTTED AND FREEHAND DRAWING: These let you to squiggle lines all over the screen with the current brush. By clicking in the bottom right-hand corner of the freehand tool you can draw any shape and it will be filled in.

LINE DRAWING: This allows you to set a starting point and drag a line around the screen before stamping it in the right place. Clicking with the right button allows you to set the type of line used.

FILL AN AREA: Fills an area with the colour you're painting with. Clicking on this with the right button also allows you to set a textured fill using a range of colour or a pattern from a brush.

RECTANGLE: This allows you to draw hollow rectangles with the current brush, or, if you click on the bottom-right half, filled rectangles.

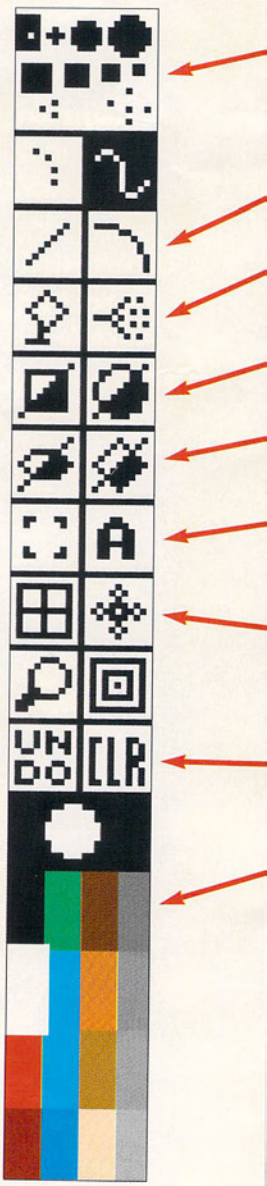
ELLIPSE: You can use this tool to draw filled or hollow elliptical shapes at any angle. It does the hard work for you.

CUSTOM BRUSH PICKUP: By selecting this, you can pick up an area of the screen to use as a painting brush or to set as a fill pattern. Picking a brush up with the right-hand button cuts the brush from the display leaving a hole, using the left button makes a copy.

GRID: This restricts your mouse movement to the corners of a preset grid, which can be adjusted by selecting the tool with the right mouse button.

MAGNIFY: This allows you to zoom in on a particular area for close-up work. Clicking with the left and right mouse buttons on the Zoom tool to its right will zoom in or out respectively.

UNDO: If you make a mistake, this is the button to hit! It undoes the last thing you did, but only if you don't click anywhere else before you Undo.



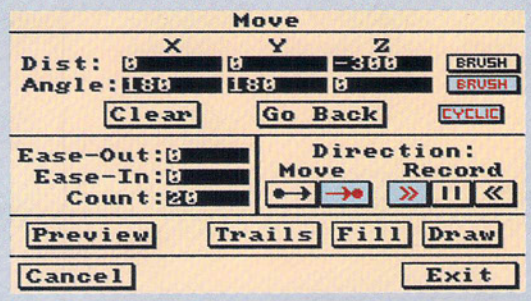
IT'S EASY WITH DELUXE PAINT!

and set a movement path with the MOVE requester. Sound interesting? Then let's have a little example...

Boot up *Deluxe Paint* in Low Resolution mode and go to FRAMES in the ANIM menu. Go to SET and type in 20 as the number of frames.

Press J to get to the scratch page and load up any picture, then select CUSTOM BRUSH PICKUP from the control panel and pick up an area of the screen to use in your animation.

Press J to get back to the animation and press 1 on the keyboard to jump to the last frame. Now stamp your brush down right in the



Now click on the icon that has an arrow pointing towards a dot. This sets the animator so that it will work out the frames to end up at your current position.

Finally click on DRAW to render the animation and press 6 on the keyboard to view the marvellous effect.

Now, wasn't that easier than you thought? Good! Now you can try experimenting with your own animations!

AMIGA FORMAT AMIGA FORMAT

erful world of Graphics

computer that's capable of amazing graphics: you've got Deluxe Paint III, the ideal and you've got, here and every month in Amiga Format, **all the info you need...**

Here's how to use all the tools...

THE BRUSHES: By clicking on these, you can select the size and shape of brush you want to work with.

CURVED LINE: This works in the same way as line drawing, except that once you have placed your line you can bend it by moving the mouse.

AIRBRUSH: This sprays a pattern on the screen using the current brush. Clicking with the right button allows you to set the size of the airbrush.

CIRCLE: This works in a similar way to the rectangle tool, except using filled or hollow circles.

POLYGON: This allows you to draw a series of linked lines to form a hollow or filled polygon shape.

TEXT: Using this tool, you can type text directly on the screen. Clicking on this with the right-hand button calls up a file requester to allow you to change the style of the type or even load in totally different fonts.

MIRROR: This enables a kaleidoscope effect, where all your moves are reflected in preset directions to give strange and interesting patterns.

CLEAR: Clears the screen to the currently selected background colour.

COLOUR PALETTE: To select a colour, simply click on it in the palette display. Selecting a colour with the left button designates it as a foreground colour – in other words, one to paint with – whereas clicking with the right button sets it as the background colour.

You can also select a colour from the screen by clicking on the round coloured blob just above the palette and selecting the required colour from the main screen. If you want to get to the mixing palette, click on the blob with the right button.

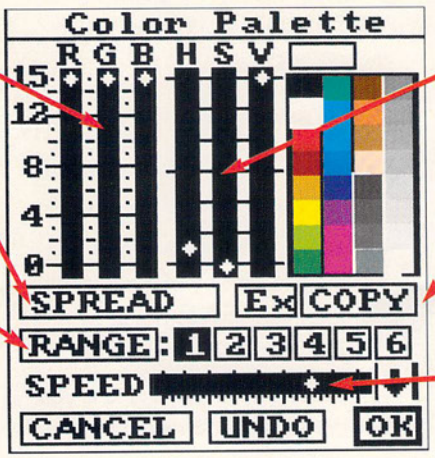
THE MIXING PALETTE: Here's where you make your colours

This is where you mix up the colours to use in your painting. TV screens use a combination of red, green and blue to mix colours and *Deluxe Paint* uses the same technique. There are 4,096 different combinations of red, green and blue allowed: have some fun with it!

RED, GREEN AND BLUE SLIDERS
This is where the actual colours are mixed around.

SPREAD
By setting start and end colours, you can use Spread to calculate the inbetween shades.

RANGES
You can bracket sections of the palette to form ranges and store them in six sets.

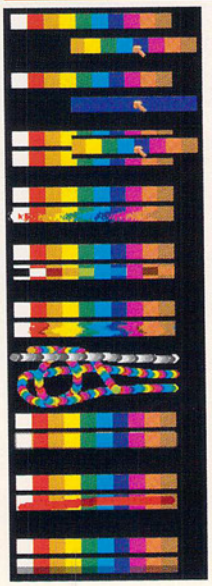


HUE, SATURATION AND VALENCE
If you prefer to adjust colours by changing the colour, richness and brightness, then do it here. It's gives just the same results as RGB colour mixing.

EXCHANGE and COPY
These both allow you to move colours around and copy colours to other places in the palette.

CYCLE
Controls the direction and speed at which colour cycling works.

THE MODES: Deluxe Paint features ten different ways to paint...



MATTE: Allows you to draw with a custom brush with the background colour transparent.

COLOUR: The normal drawing mode, this draws with the current brush shape in the selected colour.

REPLC: Replace mode draws with a custom brush, including any background colour the brush contains.

SMEAR: Smear scatters pixels under the brush, giving a smeared effect like rubbing your finger over a blackboard.

SHADE: This shifts the colour under the brush one along in its range. The left-hand button moves one forward, while the right button moves one back.

BLEND: To give a blended effect, this mode averages out the colour under the brush using colours in the same range.

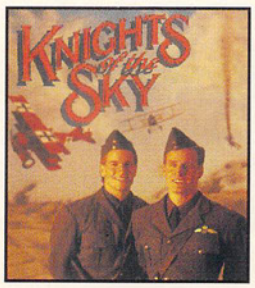
CYCLE: This draws with the current brush, stepping through the colours in the current range every time a new blob is drawn.

SMOOTH: Smooth looks at the boundaries between colours under the brush and places varying shades along the edges to smooth them out.

TINT: This replaces colours on the screen with the nearest shade in the current range, allowing you to keep the same shading with a different colour.

HBRITE: This is a Halfbrite shading mode and can therefore only be used in 64 colour mode.

What will you cha



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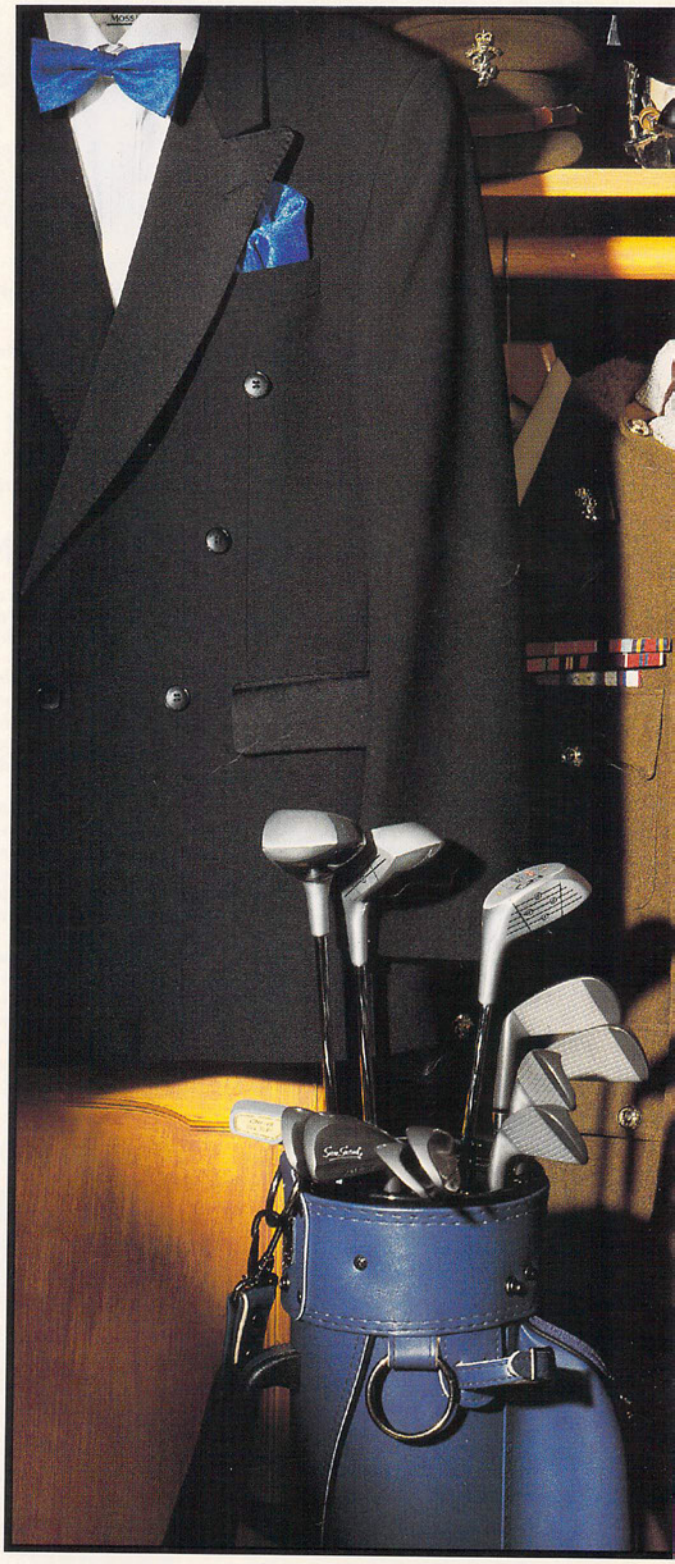
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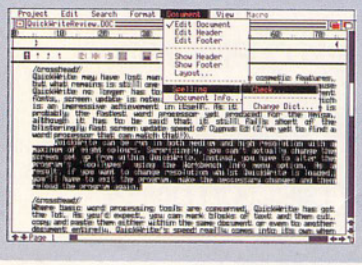
Do you want to really do something with your Amiga? Something creative – or just plain useful? Every issue of Amiga Format brings you the first and the best reviews of all the kit that'll help you get results. Right here, get the info you need to **make the most of your Amiga...**

DIGITISERS

A digitiser is a box that connects a video camera or a video recorder up to your Amiga, plus software that lets you grab in pictures. Digitisers come in two kinds: 'real-time', which get a full-colour picture instantly, and 'three-pass', where you have to do separate grabs for red, green and blue. Digitisers are great for graphics because you can use real photos in your pictures and do what you want to them. They make it easy for anyone to get good results.

WORD PROCESSING

Word processing, or WP, is using your Amiga instead of a typewriter: but it's a whole lot easier, because you can change things so easily. You can cut bits of your text from one place and stick them in another, go back and correct your mistakes and even have the computer check that you've spelt all your words correctly. When you've finished, print it out on your printer.



BEST BUY:
QUICKWRITE
New Horizons

This is a cut-down version of one of the top word processors, especially designed for beginners. It's speedy to use and easy to get into.

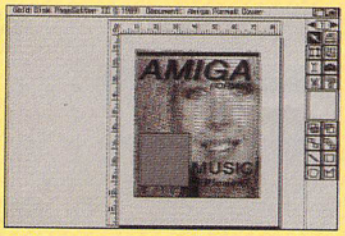
RECOMMENDED:
PROTEXT 5
Arnor

Powerful and clean, this is the one the experts use. Raw word power: you can't use pictures. Only problem is that it's complex to use at first.



DESKTOP PUBLISHING

DTP, as it's known for short, means putting together a whole page of print and pictures. You can change the style and size of type to give headlines, picture captions and all the rest. You can include pictures from a paint program like *Deluxe Paint*, and print the whole lot out to make up posters or the pages of a newsletter or fanzine.



BEST BUY: PAGESETTER 2
Gold Disk

This is a simple but effective beginner's version of the best top-end program. It'll do everything you need to start off with and it's the best place for beginners to... errm... begin!



ALSO RECOMMENDED:
PROFESSIONAL PAGE 2
Gold Disk

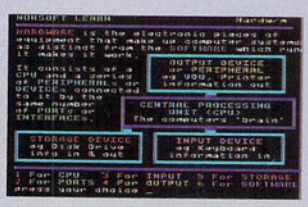
And this is the best DTP package available, packed with professional features for when you're experienced and getting good.

SCANNERS

A scanner is a gadget that moves slowly across a picture, reading it into your Amiga and then displaying it on your screen. This is great for DTP, because you can pull the picture into your page, and scanners give a very fine-quality result. Cheaper 'hand scanners' you have to pull across the picture yourself and will only give you pictures in black-and-white: more expensive 'flatbed scanners' you just put over the picture and they do all the work for you.



And there's so much more! There's lots of other things your Amiga



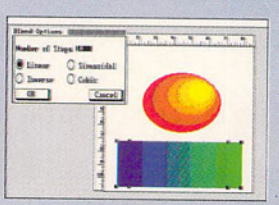
THE BBC EMULATOR
is just one of the ways your Amiga can pretend to be another type of computer: an ST, a C64, a Spectrum, a Macintosh, a PC or, as here, a BBC.

DISTANT SUNS
is an example of one of the weirder programs on the Amiga. Created by an astronomy enthusiast, it'll help you identify stars in the night sky!





VISTA
is a weird kind of graphics program that produces landscapes using fractal images. It's the closest thing in computer graphics to images of the real natural world.



PROFESSIONAL DRAW
is an illustration program which is based around line-drawings. It differs from a paint package in that you can bend the lines you've drawn at will.

BEST BUY:
DIGIVIEW GOLD
Newtek



A three-pass system, where separate red, green and blue need to be taken, so it's slow, but the quality of results is very good.

ALSO RECOMMENDED:
COLOURPIC
JCL



The best value for a 'real-time' system which will let you grab in just one go, even from moving videos.

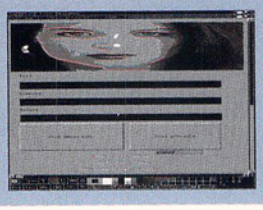
DATABASES

These are huge filing cabinets on a disk for storing all kinds of information in. You could type in, for instance, all the details of your record collection: then, because of the way the information is organised, you can sort it out in all kinds of ways: alphabetical order, all the LPs by a certain artist, all the albums with the word 'Elephant' in the title, whatever...



BEST BUY:
SUPERBASE PERSONAL
Precision

This is the original easy-to-use database: you can even store pictures in it. It's cheap and clever video recorder style controls make life easy.

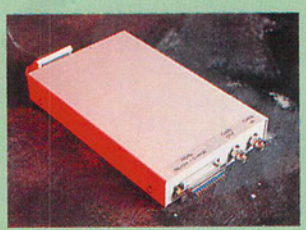


ALSO RECOMMENDED:
SUPERBASE PROFESSIONAL
Precision

This is the very latest in state-of-the-art 'business' software. It's very powerful, with all kinds of advanced features, but it's also expensive.

VIDEO

All you need is one extra bit of hardware, a thing called a genlock. This mixes the picture from the Amiga with the picture from a video player and lets you record the whole lot back to video. After that, you can use graphics software or a special 'video titling' program to make title sequences, captions and whizzy graphics. But you need lots of video kit...

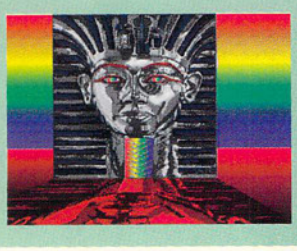


BEST BUY: RENDALE 8802 GENLOCK
Rendale

This is a reliable and relatively inexpensive genlock that'll let you get on with the job. A good place to start. No fancy features, so it's simple to use.

ALSO RECOMMENDED:
DELUXE PAINT IV
Electronic Arts

Once you've got a genlock, all you need to do is graphics and titles. This does all the words and pictures, so why should you buy a special video titler?



BEST BUY:
DAATASCAN HAND SCANNER
PanDAAL



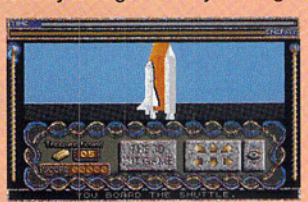
The best of the black-and-white hand-held scanners: quality results and easy to use.

ALSO RECOMMENDED:
SHARP JX-100, SCANLAB SOFTWARE
Sharp, software by ASDG

Scans in full colour, gives very professional-quality results, but you'll need lots of memory to use it and it is pretty expensive at around £600.

DIY GAMES PROGRAMMING

The one reason many people get into programming is to make their own games. You can start with the Basic language that comes with your machine, or you can buy a better Basic. Either way you have to learn programming from scratch. An easier way is to get a ready-made games creator, which will do all the hard work.



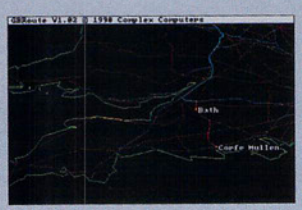
BEST BUY:
3D CONSTRUCTION KIT
Domark

This is based on the Freescape system, used for games like *Driller* and *Total Eclipse*. There's no programming, so it's easy to make your own 3D adventures.

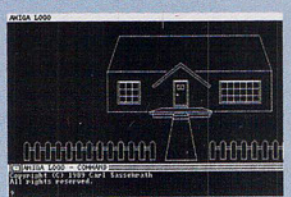
ALSO RECOMMENDED: AMOS
Mandarin

A Basic language, so you do need to learn programming – but lots of special features make this easier and will help you get the best results.

can do, too... read **Amiga Format** every month to keep tabs on the whole scene!



GB ROUTE is a route planner, kitted out with a big map of the UK. Type in where you're setting off from and where you're going and it'll tell you the best route, how long it'll take and even how much fuel you'll use.



LOGO is just one of many educational programs. Most are more or less games to teach spelling or maths, but this teaches programming and is used in many schools. Look out too for *Kid's Type*, WP for young children.

MAKING YOUR PURCHASE

All the products on this page can be purchased from good local computer dealers, especially those who specialise in the Amiga. Not all dealers, however, will carry all the products listed here. If your local supplier doesn't have the item you want in stock, they should be able to contact the manufacturers named here for you and order the stuff. Always remember to keep receipts for things you buy, just in case you have problems at a later date. And remember to buy *Amiga Format* every month to find out what's new!



Yes, you can be a pop star! A handy little idea called MIDI lets you hook your Amiga up to to a wide range of music equipment, including synthesisers, samplers and drum machines. You can even control tape decks via MIDI to lay down your hits.

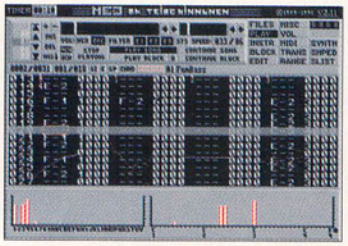
Bring the Noise!

Have you noticed how much computer music there is in the charts? Did you know you can do it yourself? Get into the groove with our **rough guide to making music...**

SAMPLE-SEQUENCING

Messing around with a sampler is without doubt great fun, but once you've collected a wide enough range of pings, shouts, bangs and other musical bits with your sampling system, you'll no doubt want to start writing tunes with them.

When creating stand-alone Amiga music, such as for games or demos, most people tend to plump for PD programs such as **NoiseTracker** or **MED.** Since they are public domain programs, they can be picked up for next to nothing. To get hold of them, just contact a PD library to check availability.



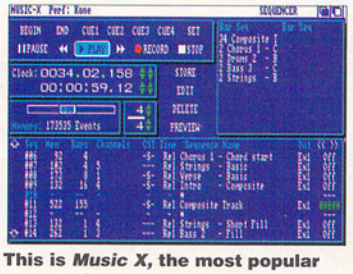
***MED* is one of many music-making programs available for next to nothing from PD libraries (see Page 44). It's a good way to start.**

Another popular choice is **Sonix.** This lets you produce music containing samples on a proper musical stave, but you have to make sure that the samples are saved in the correct format. Most available sampling programs will save sounds in a form that *Sonix* can use, so this isn't a problem. As well as using samples, *Sonix* allows you to create sounds directly using the Amiga's sound chip via a dedicated synthesiser page.

If you want to include music in your own games or other programs, then Demonware's **TFMX** is a good bet. As well as allowing you to construct music in patterns, the program also contains a powerful tool for manipulating samples to fit them into the required piece of music. You can fade sounds in or out, tune them or make them loop and you can save them as a 'module' which will play along with your program. Very useful.

GETTING SERIOUS WITH MIDI

If you think that MIDI means those all-in-one stereogram units, then think again. MIDI actually stands for Musical Instrument Digital Interface and is a standard which allows synthesisers, drum machines and other electronic instruments to be connected to your Amiga and even played by the Amiga. With a piece of software called a sequencer, you can write whole tunes on your Amiga using an orchestra's worth of instruments and get your synth to play them back using its own sounds. The first thing you need is a MIDI interface, which is a box which simply allows your Amiga to talk MIDI to the instruments. The one favoured by most Amiga MIDI enthusiasts is Datel's.



This is *Music X*, the most popular sequencing program. Professional musicians use it to write songs.

Next you'll need a sequencing program to actually write the songs with: the standard package is Microillusions' **Music X**, either in it's full form or as a beginner's program in the shape of *Music X Junior*. *Music X* not only allows you to write tunes, it also contains an option for using Amiga samples in your tracks, a filtering system to allow you to route MIDI signals to various devices and the ability to use what is called a patch and protocol editor, which is used to create new sounds on the Amiga for your synth.

Another popular program is **Bars and Pipes** from Blue Riband Bakery, which is now available in its Professional incarnation. This combines sequence score editing with an innovative system that allows you to set up rather complex MIDI effects such as automatic delays and pitch changes with little fuss. There are also professionally-used packages such as Steinberg's **Pro-24** and **Sequencer One** from Gajits to consider if you're serious about it. These are exactly the kind of program used by musicians when they are working in recording studios.

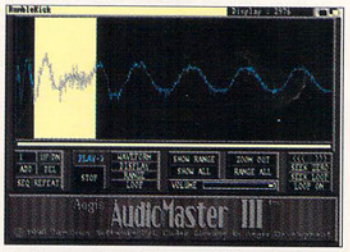
Your Amiga is quite capable of making great music on its own. It has stereo sound and the ability to 'sample' sounds in from the outside world. These sounds can then be put together using a 'sample sequencer' to make full tunes to play back just from a floppy disk.

But if you want to be a serious musician, you can connect modern electronic instruments – synthesisers and the like – and play them from your Amiga, thanks to a thing called MIDI. Read on to learn more about all these musical possibilities...

SAMPLING

The special custom sound hardware inside the machine makes it possible to record sounds into your computer, edit them and add all manner of effects and save them out for use in other programs.

In order to record sound into your Amiga you will need sampling hardware and some editing software. Generally, these are sold together as a complete package.



***Audiomaster III* is probably the best sampling software there is. Sound quality is the main criterion when picking a good sampler.**

Top of the heap is **Audio Engineer**, a superb piece of sampling hardware along with one of the best sampling programs available. Not only can you record and edit sounds with this system, you can also use a special system of 'loops', which basically means repeating a sound. Using a sequence of up to 99 loops you can repeat different looped sections of a sample in a specific order, allowing you to virtually reconstruct an entire song from a short snatch of music! At £199 the package isn't cheap, but the results are superb.

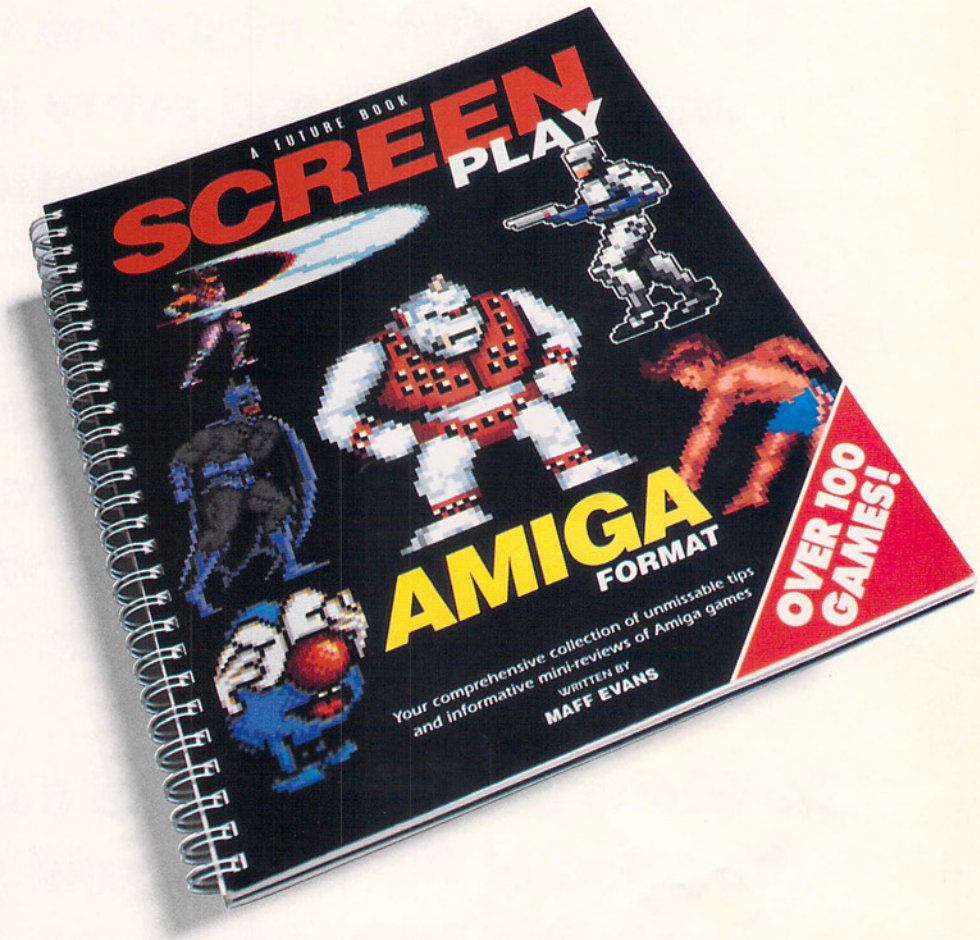
If this is a bit out of your reach, then Oxxi's own package, **Sound Master**, may be more like the thing for you. The package contains a stereo sampling unit along with their **Audiomaster III** software. The Oxxi cartridge itself is superb, featuring an input slider and a built-in mic which gives very good results.

For the novice, there is no better starting point than **Technosound.** The package contains some useful tutorials to get you started and has been recently updated to let you have a bash at basic sample and MIDI sequencing to create simple tunes.

If you buy a cheaper system, you can upgrade to better software later but keep using your old hardware. The one to go for is **Audiomaster III.** This is a version of the software included with Audio Engineer, with a few alterations to allow it to run with a wide range of sampling hardware.

Buying games? Playing games? You need this!

- **Reviews of over 100 games** will help you decide what to buy
- **Tips, cheat modes and advice for over 100 games** can help you out if you're stuck
- **Maps for 12 big games** show you the way to reach the end
- **Complete solutions and playing guides** will take you further than you've ever been before
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Lovingly constructed by Amiga Format Gamebusters supremo **MAFF EVANS** and costing only £9.95, this 162-page tome is the vital accessory for anyone who's serious about their games. Get it now!

All these games reviewed, tipped and hinted:

Aaargh!, APB, Arkanoid, Austerlitz, Barbarian, Batman the Movie, Battlehawks 1942, Battle Squadron, Beach Volley, Bloodwych, Bombuzal, Castle Master, Chase HQ, Conqueror, Continental Circus, Corporation, Cybernoid I and II, Denaris, Double Dragon, Drakkhen, Dungeon Master, Elite, Escape from the Planet of the Robot Monsters, Eye of Horus, Federation of Free Traders, Fighter Bomber, Flood, Fusion, F-29 Retaliator, Gemini Wing, Ghouls 'n' Ghosts, Goldrunner, Hard Drivin', Hawkeye, Helter Skelter, Hero's Quest, Infestation, Interceptor, Interphase, Jumping Jack Son, Kick Off 1 and 2, Klax, Laser Squad, Lost Patrol, Menace, Millennium 2.2, Nebulus, Neuromancer, New Zealand Story, Ninja Warriors, Omega, Pipe Mania, Platoon, Player Manager, Powerdrome, Rainbow Islands, Rick Dangerous, Robocop, Rock, 'n' Roll, Rotor, R-Type, Silkworm, Sim City, Starglider 1 and 2, Strider, Stunt Car Racer, Supercars, Switchblade, Three Stooges, Thunderblade, Untouchables, Venus the Fly Trap, Vigilante, Wicked, Wizball, Xenomorph, X-Out, Xybots

Complete solutions for these games:

Batman - The Caped Crusader, Cadaver, Damocles, Dragon's Lair, Future Wars, It Came from the Desert, Kult, Operation Stealth, Shadow of the Beast I and II, Space Ace

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Q. Which is the only Amiga magazine solely dedicated to using the Amiga as a serious computer?

A. Amiga Shopper

Q. Which Amiga magazine takes 16 pages of each and every issue to answer readers' questions?

A. Amiga Shopper

Q. Which Amiga magazine has monthly columns from some of the Amiga world's most respected writers?

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Q. Which Amiga magazine costs a third the price of the others, and gives you only the information you need?

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Whilst working, you can open up to four documents simultaneously (memory permitting), search and replace; cut, copy and paste; check your spelling with a 100,000+ word dictionary. You can import your favourite IFF/HAM graphics, from programs such as DPaint II or Clip Art files in various sizes and colours. You can automatically flow text around graphics in any Workbench compatible font (there are over 200 available styles), in different sizes and colours to suit your design... even as you type. All this from a word processor and... Much, Much, More!

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Operating with 32 fields per record, and 32,000 records per database with a fast sort of 1000 records in less than 5 seconds this is a *real* database.

Pen Pal requires an Amiga 500/1500/2000 or 3000 with a minimum of 1megabyte of available memory.



Pen Pal

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."...its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically wrap text around graphics..."
Amiga World...Jul. '90

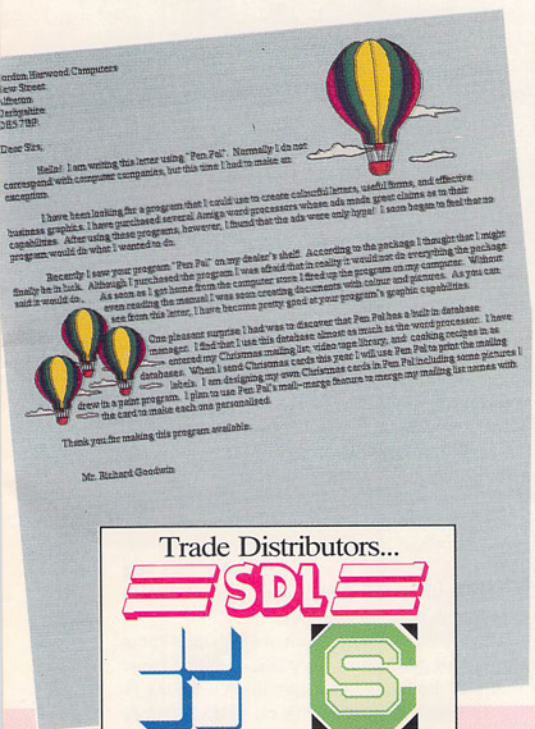
."..without beating around the bush Pen Pal is very special.." - "There is little to fault Pen Pal and it deserves to do well." *Amiga Format...Dec. '90*

"...I am extremely pleased with your product especially the Graphic Capabilities within the Word Processor. Having the Database on the same disk has made PEN PAL the best program I have..." *D.S.B., Plumstead, LONDON*

"...Please let me tell you how amazed I am at how EASY IT IS TO USE PEN PAL. The manuals supplied are very informative and very clear..."
P.S.S., Clifton, NOTTINGHAM

"...A most excellent piece of software..."
E.P.H., Strathclyde, SCOTLAND

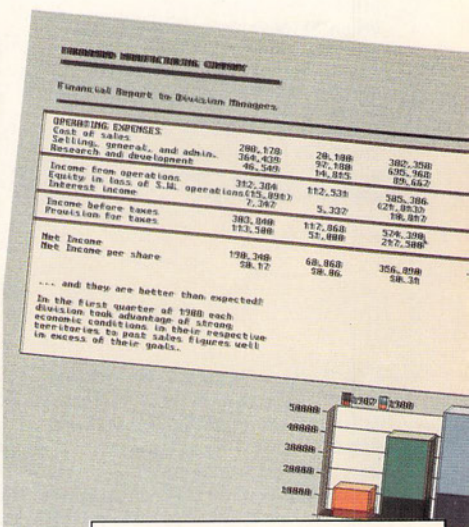




Man's (and Woman's) Best Friend



As you can see, Pen Pal can integrate text *and* graphics images all on one document and, not only that, but... IN FULL COLOUR TOO!



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EXPAND YOUR SYSTEM

Your new Amiga 500 is just a start: there are so many improvements you can make simply by plugging in extra hardware to expand your system. Just as a taste of the many kinds of hardware you'll see every month in Amiga Format's world-beating reviews, here's **the essential guide to hardware...**

MEMORY EXPANSION

If you've read the feature on Pages 11-14 of this special issue, you should already know what RAM is and does. If not, read it now and find out. Now, a basic Amiga 500 has only 512K of RAM, but yours has an extra 512K plugged in on a board in the 'trapdoor' slot under your Amiga. This gives you 1024K – known as a Megabyte – in total.

Now that's a lot of memory, but certain things you can do with the Amiga just eat up RAM, so you may find yourself needing yet more. A prime example is animation: when you start knocking out long animations with *Deluxe Paint III,* you may well find the program complaining that there's not enough memory. What do you do?

Well, you have three choices, but all of them involve plugging in an extra board with more memory chips. First, you can take out the A501 board from under your machine and plug in a bigger one. Second, if you're buying a hard drive anyway (see below) you can pick a hard drive with extra memory included on it. Thirdly, and probably the easiest way, you can get a special kind of RAM expansion in a smart case that plugs into the side of your Amiga just like a hard drive does. These also have what's called a 'pass-thru connector', which basically means it has another plug on the opposite side, so you can still plug a hard drive in.

Our favourite RAM expansion is the SupraRAM 500RX, made by Supra in America and sold by WTS (0582 491949). It plugs on the side and comes with as much RAM as you ask for, from 2 Megabytes for £198 on up.



You don't need more memory to play games than the Megabyte in your new Amiga. But if you get into graphics, you may need yet more.

ACCELERATORS

The main chip (CPU) in your Amiga is a Motorola 68000, but there are new versions which run faster – they can handle more calculations per second. They come on 'accelerator boards' all ready to plug in, but you'll only really need one if you get heavily into 3D graphics (see Page 30), so we don't recommend you buy one just yet.

THE TOTAL SET-UP

This is a typical Amiga 500 system. Second disk drive, printer, monitor, hard disk drive, extra memory and a new mouse – by the time you've got that lot, you'll be a real 'power user', as they say in the trade.
But probably the first thing you'll get is a joystick – after all, you can't play many games without one!



HARD DISK DRIVE

A hard disk is for people who are serious about their computer – but no, I don't mean serious as in boring! A hard disk can hold lots of data – typically 20 or 40 Megabytes (a Megabyte is 1000K) as opposed to the .88 Megabyte (880K) on a floppy disk. Mind you, don't think you'll be able to store lots and lots of your games on one hard disk: you'll find that most games are 'copy protected', which means not only that you can't copy them onto another floppy disk, you also can't copy them to a hard drive.

Are you clear on what a floppy disk is? Although the case in which the 3.5-inch Amiga-style floppy disks come is solid, the disk inside is thin, bendy plastic with magnetic stuff all over, a bit like a circular piece of cassette tape. Get a blank one (make *sure* it's blank) and rip it apart to have a look. Go on! They cost less than a quid, and it's very educational!

Right, a hard drive is a big box with a similar disk in, but the disk is rock hard. For some reason, this means they can store a lot more data. Don't ask me why. It also means there's nothing to take in or out, so you'll never actually see the disk itself.

On a hard disk drive, you can put almost any kind of program except for your games. So you could have *Deluxe Paint* on there, along with a word processor and anything else you own. What's more, when you create a picture in *Deluxe Paint* or write a letter with your word processor, you can save that onto the hard drive too. A hard drive will also hold the contents of your Workbench disk, which means it can 'boot up' automatically when you switch the power on: you don't have to put a floppy disk in at all.

Most hard drives plug onto the 'edge connector' on the side of the Amiga opposite the floppy disk drive. Pull off the small plastic flap and you'll see a load of silver tabs: this is the edge of the Amiga's main circuit board, so be careful. Always slot things onto here gently.

Our favourite hard drive is the GVP A500+, which we've used for a long time and found to be very reliable as well as very fast, the two most important qualities in a hard drive. You can also get them with extra memory plugged in. A simple 20 Megabyte model with no extra memory will cost you £499 from Power on 0234 273000.

Making the Connection

MONITOR

You don't absolutely *need* a monitor, but it makes life a heck of a lot more pleasant. If you're using the Amiga plugged into the telly via the TV modulator, you get some loss in signal quality, so the colours are duller and the picture is less sharp. It's like watching an elderly video tape, as opposed to watching a brand spanking new one.

The reason for this is that the Amiga produces a lovely signal for the screen known as an 'RGB' signal. As you may know, a TV produces all the colours on the screen by mixing Red, Green and Blue, and an RGB signal sends these colours down the wires separately, so they lose no accuracy. A TV modulator, however, converts the RGB to what's known as an 'RF' signal, which is much less accurate, so you lose a lot of quality.

A monitor not only uses a complete RGB signal, it also has a higher 'resolution' than a TV. This basically means that the little dots which make up the picture are all much finer, giving you a better-quality picture.

Monitors are more or less vital if you use your Amiga for graphics and for something like word processing they'll save you a lot of eyestrain, but they can also give games a lot more impact, especially if you pick one with stereo sound. The latest monitor appropriate for the Amiga is the Philips CM8833/II, which is a goodie. You can pick one up for around £250 from almost any computer store, but do remember to get a suitable lead when you buy it.

PRINTER

Your Amiga can use almost any make of printer: you're not limited to ones specially made for it, the same way you are with something like a disk drive. But in order to talk to the printer, your Amiga needs a little program called a 'printer driver'. There's a whole bunch of these on the Workbench disks that came with your machine, which will cover most kinds of printer, and the manual tells you how to pick one to use: but when you're buying a printer it's best to ask about Amiga printer drivers to make sure you've got the right one.

Printers plug into either the serial or the parallel socket on the back of the Amiga – see Pages 14-15 if you don't know where these are. The basic type of printer is called a 'dot matrix' because when you print words the shapes of the letters are made with dots, produced by pins pushing against the paper through an ink ribbon. There are two kinds of dot matrix printer, 9-pin and 24-pin: the more pins there are to make each shape with, the more accurate and clearer becomes the shape printed, so 24-pin printers are better. And, of course, more expensive.

Many dot matrix printers can either just print over each letter once – so the letters are pale, which is called 'draft' – or print over each letter a second time, which makes them sharper and bolder – this is often called 'near letter quality' or NLQ, because it's good enough to write business letters with. Dot matrix printers can also print pictures and are available in colour versions, so you can print piccies in full colour.

There are, of course, many other types of printer, getting better and better in quality as they get more expensive. But as they start at several hundred pounds, we'll leave these be for the time being, eh? To start with, you should be looking for something like a Star LC-10 (about £160 for the basic 9-pin version) up to the Star LC-24-200 (about £300) which is a full-colour 24-pin model.



A WORD IN YOUR EAR...

All the products on this page can be purchased from any good local computer dealer, especially those who specialise in the Amiga. But just in case you can't find a local supplier, we've also given you the phone numbers of the manufacturer or distributor. Simply give them a ring during normal office hours and they will be able to tell you who is your nearest local stockist.

JOYSTICK

You'll need one for playing games. You'll need two for playing two-player games against your mates. And preferably you'll need two types. Why? Well, for games of the alien-blasting kind, you're bound to need an auto-fire: but some other games prefer a joystick with no auto-fire.

MOUSE

The mouse you get with your Amiga is quite an aged design. If you get a new one, you'll find it easier to use, more accurate and more pleasant to live with, as well as smarter. Our favourite is made by Naksha (0925 56398) and costs £29.99.

SECOND DISK DRIVE

There are two very good reasons for having a second disk drive. One: copying files or programs from one disk to another is going to be one of the most common things you do. If you don't have two disk drives, the Amiga will ask you to put the first disk in while it loads a little bit of whatever it's copying into memory... then it'll ask you to put the second disk in while it copies the stuff out of memory onto the disk... then it'll ask you to put the first disk back on again... and so on, and so on. It gets very wearing.

Two: if you ever buy an epic game like a big adventure, you may find it comes on several disks. You'll find yourself being stopped in your tracks every so often while the game asks you to put another disk in and sometimes you may have the same swapping over and over as when copying a disk. It's a serious pain.

Cut the hassle and buy a second drive. They only cost about £60 and it's well worth the dosh. They plug in very easily to the socket marked 'disk drive' on the back of the Amiga. Can we recommend a good one? Oh, all right then. Best in a recent independent test by our sister magazine *Amiga Shopper* ('the magazine that's serious about your Amiga', or so they say) was the PC880 Power Drive from Power (0234 273000), which costs £65 and stands up to all manner of wear and tear.

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PD Update

Value for money! Non-commercial! Wild and wacky! That's three aspects of Public Domain software, and there's lots more. Find out about it in our guide to how to get **something for practically nothing...**

Imagine getting a catalogue of software for your new computer which had over 2000 different titles listed. Imagine buying a disk with software on it for as little as 90 pence. Imagine phoning somebody up, saying "I need a program to do exactly this..." and getting it delivered to your door. Finally, you can give copies to whoever you like with (usually) no legal strings attached. Well, you just imagined the Public Domain.

Computer Public Domain (or PD for short) started when computer artists, programmers and musicians started swapping their own material with one another. Later on, it got more and more widespread, the main rule being this: on the disk it would state the conditions for distributing the software.

One further point of PD: because the authors of the programs are doing it mostly for altruistic reasons, they are usually very interested in correcting mistakes in their programs and releasing new versions which work better.

Simple Rules

There are several different kinds of PD, which come under three main headings. 'Freeware' can be given to whoever you like, although its inclusion in a commercial (money-making) program is not allowed. 'Shareware' is a way of trying out software before you buy. You can give it to whoever you like, but if you find the program useful then you are expected to send a contribution of some kind to the programmer: these contributions range from perhaps £20 to a six pack of beer!

Finally there's 'Licenseware' which you are not allowed to give away to friends. You need a license from the programmer to distribute it. Licenseware is often very high quality, and offers good value for money. It's also more expensive, because whoever has a license charges more and gives it to the programmer.

An Ocean of Software

To start with, there wasn't much PD, simply because unless you knew a programmer there was no method of obtaining it. Gradually, specialist dealers or libraries started operating. These have a catalogue of disks (obtainable from the library itself) listing all their titles – often over 1000 different disks! Many disks contain more than one program, so there are literally thousands of PD titles, and the list grows every day.

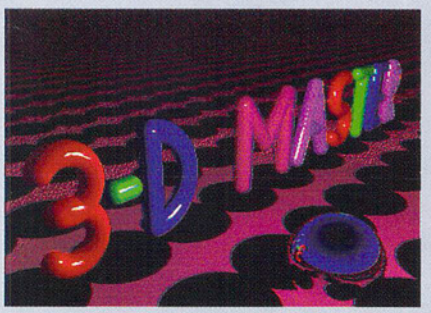
No Rules

To actually release something of your own into PD, all you have to do is send a copy to a library. Just giving it to friends means that eventually (perhaps years from now) it will appear. Best of all, there are no rules except for the Obscenities Act, which means that your programs can be as individual as you want so long as they don't grossly offend anyone.

Utilities

There are so many utilities, from creating music to programming, image processing, emulating other computer systems, creating demos, word processors, databases – the list goes on and on. Here's some we reckon are worth getting hold of...

3DMASTER



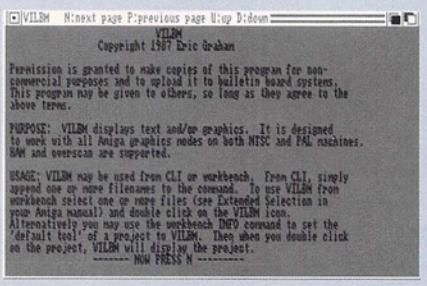
***3DMaster* is one of the very few 3D graphics or 'rendering' programs available through the PD, and it has few rough edges. It needs time to get the best results, but it's well worth the effort.**

This is a 3D ray-tracing program, for creating stunning masterpieces in colour. Ray traces work by first designing the scene in all three dimensions, then setting a camera to look at a particular point and take a picture.

This program is good for three reasons. First, it's quite fast – maybe an hour to take one picture (commercial software takes hours or even days). Second, it's cheap – buying a full price program will cost you £150 for an average rendering program. Third, it's fairly easy to use – not exactly professional quality, but fun to play with.

The downside is that it isn't complete, it's a 'Shareware demo'. To get the full program, you have to buy it from Senlac (the full program is Licenseware) and it will cost you the princely sum of £35.

VILBM



When started incorrectly, *Vilbm* displays instructions on how to use it properly. It's such a useful program, so widespread as a consequence: it lets you display pictures you've made without needing your art program to load them onto the screen.

This is a very small but useful utility. It's for displaying pictures or text files: after you've drawn a stunning masterpiece with *Deluxe Paint III* you'll want to be able to give it away to people on a disk, and that's where *Vilbm* comes in handy.

The name stands for "View Interleaved Bit Map" – which means 'look at picture' in English. *Vilbm* will cope with pictures drawn in any standard graphics mode including HAM, 4096 colours. It's such a useful program that it's included on many PD disks, usually the ones filled with still pictures only.

Vilbm can be set to display a series of pictures or texts, or used with Workbench to display a picture when its icon is clicked on. If you set it up wrong, it brings up a list of instructions for using it correctly – a very handy idea, and one you see on quite a lot of well-written programs.

ZEROVIRUS III



Getting rid of nasty computer viruses is fairly easy with *ZeroVirus III*.

We've all heard about computer viruses: nasty programs that copy themselves across floppy disks and end up destroying them. The problem is that if you do a lot of copying, then you only need one virus to destroy many disks. Bad news for Public Domain.

The good news is that there are many PD virus detector programs. The easiest to use is this one: it will detect most kinds of virus and is updated every few months as new strains and mutations of computer viruses appear. So you don't need a new program, just a new update, or 'brainfile' as it's known.

Best of all, *ZeroVirus III* can be set up to start working automatically on a Workbench disk, so that you can work normally without the worry of checking for a virus. Instead, the program will automatically check for viruses whenever a different disk is inserted into a disk drive. Neat, huh?

Games

Most PD games are freeware, partly because most of them are nothing special, but also because they are mostly imitations or Amiga versions of existing games. Having said that, here are some which are worth looking at.

TINYBALL



Playing *TinyBall* is so compulsive – it's not particularly easy to put the ball where you want, but it's a laugh all the same.

TinyBall is outstanding in one simple respect – it's a very small version of baseball. So small, in fact, that you can have it running on your Workbench screen when Workbench is busy doing other things.

All the rules are there, but cut down – the only part of the game in view is the confrontation between pitcher and hitter. So it comes down to giving it a go and seeing where the ball goes.

Tinyball is a product of American PD fiends the Tampa Bay Amiga Group (T-BAG, geddit?) and T-BAG disks are well worth checking out, if only because there's something for everyone on there. *Tinyball* is one of our favourites – wonder if a cricket version will come out?

DOGFIGHT II

Ever played a game where you controlled a plane which flew around the screen and you had to shoot another one down? Airplane duel games are simple but extremely fun to play, especially against a human opponent.

This game has all that and more. For one thing, up to eight people can play at once – two on joysticks and the others around the keyboard! You can split into teams or go all against all – an enjoyable and frenetic experience. It's got the "F factor": it's fun!



Setting up a game of *Dogfight* ready to play is all done from this screen. Maybe it's got too many bells and whistles, but it's a lotta fun.

STRATEGY GAMES

If mind games are more your thing, this disk has a selection of programs on it. There's that ancient *Chess* game (play the computer on several different levels of smartness or a human). If *Reversi* is your bag, the computer opponent here is really very good.

The best game, though, is a Trivia quiz. *Trek Trivia* has lots of obscure Star Trek questions, an excellent scoring system and very nice presentation. Trivia games may not be true strategy games, but they test memory much better than either *Chess* or *Reversi.*



Computers have always made poor chess players, but you'll need some experience to beat this PD one on the higher levels.

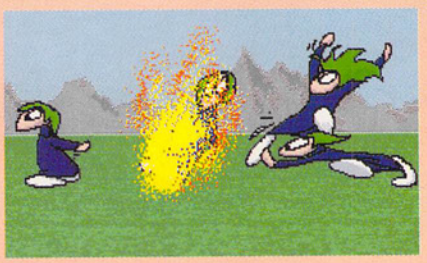
Demos

Demonstration programs, that's what demos are. Show off the Amiga and the skills of an artist. There are many different types... ray-traced, vectors, music, scrollies... but they are all about one thing: creative computing to show off the Amiga. Enjoy.

ANTI-LEMMIN'

Imagine the scene – Leona Lemmin' is playing her favourite game and selects level 125, "AeroToon Apocalypse". The lemms start walking, but an F15 swoops down and strafes them, an evil expression on its face. A single lemm is left, and he hoists his rocket launcher to wipe out the plane – the lemm succeeds but gets blown away too. Leona is left complaining about the foibles of men.

We've told you the plot because this demo is for machines with 2Mb of RAM, but the author (Eric Schwartz) has done many other demos which work with 1Mb. Look out for them, especially the AeroToons – planes with faces!



Eric Schwartz's *AeroToons* look great, sound great, and make you like them.

PLASMUTEX '91

Plasma effects need some pretty sharp programming to work as well as this. The whole screen shifts, fades out and changes in glorious colour while a Bassomatic Soul II Soul beat bops along to the rhythm. A feast for the eyes, Plasmutex '91 was written by the Flame Arrows hacking team. Most demos are created by hacking teams with names like "Scoopex", "Rebels", "Anarchy UK" to name but a few.



PD demos generally feature lots of swirling colours and it's a shame we can't animate this page for your enjoyment.

THE SPICE

If you like House or Acid music, there's tons of it available in the PD. Most demos have music of one description or another, ranging from appalling to incredible. Indeed, this particular disk has very little but music – five whole tracks on one disk!

Even if you don't like the style, this disk does have some nifty tunes it, with snatched samples from many different sources. It's also got our personal favourite Amiga song – *Mr Kirk's Nightmare.* Not light listening.

TOBIAS RICHTER

This man often releases work under the name Agatron. He has done many animations, generally of space ships flying around and looking very mean yet graceful. Most of his inspiration comes from Star Trek, and it's easy to see his style – lots of detail, lots of colours, lots of movement.

Unfortunately, he owns a fairly pokey Amiga. This particular demo needs 4.5 MB and comes on four disks! Recognizing the problems of his work, Tobias often releases still slideshows for those with less over-the-top computers.



Swooping starships, alien planets, weird reflections – Tobias Richter is in a class of his own as a picture-maker.

NIK WILLIAMS DEMO

Who is this Nik anyway? Well, he's got an Amiga (surprise surprise) and also a very expensive (£30,000) video camera. He uses this camera to read in or 'digitise' pictures to his computer, which he then sells to people interested in very clean, very sharp images.

If you want to see just how good his pictures look, we suggest you take a good glance at the demo disk. True, only five pictures – but the quality is truly awesome.



This is just about as good as you can get with a standard Amiga – and let's face it, unless you're a video professional you don't need any better.

MAGIC POCKETS

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Giant linked screen grabs show you exactly what the game looks like overall.



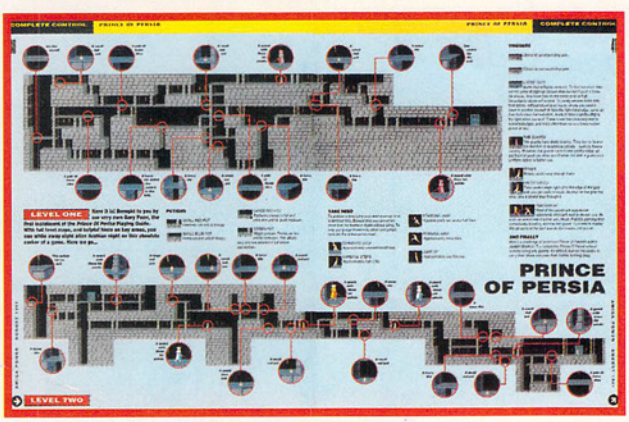
The Bottom Line – quite simply, the clearest, toughest scoring system yet devised.

Big name reviewers, including Matt Bielby, Colin Campbell and Gary Penn.

All is revealed – from each baddy's hit points to how much you'll earn if you kill him...

...while boxes, panels and annotated screens explain all the details.

Large size paper (the same as this new look Amiga Format) gives games more room to breath!



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- And, of course, all our hero's abilities made crystal clear.

NOT TO MENTION...

- THE AMIGA POWER COVERDISK brings you the greatest demos and the best PD games every month.
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If you're into Amiga games you should be into AMIGA POWER

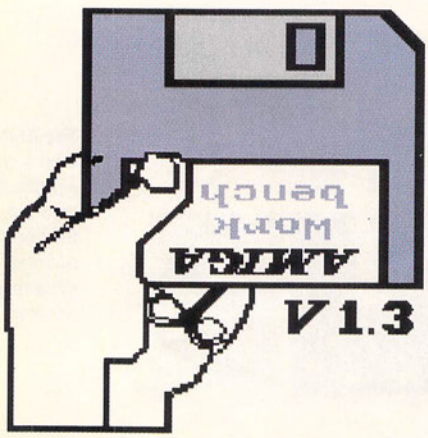
"Dad! What's this Workbench "Don't bother me now, I'm just

Work

The Workbench disk is the toolbox of the you to do all those computer-like things to do with games. Usually, we pack the pages of Amiga Format with advice use your Amiga: but for now, here's of everything you need to **get to grips**

Many people believe that computers are immensely complex, requiring years of practise and effort to comprehend. If it were left to computers to decide, that would probably be true. But people have to use them, so there has to be an easier way. And there is.

With something as technically advanced as the Amiga, there's an obvious need for something which leaves you, the human, in overall command while the computer gets on with its business. That gap is filled by Workbench, the standard control panel or 'front end' for the Amiga. Inside the computer everything is stored as numbers, but using Workbench you see things as words and pictures – which makes it easy to get the most out of the machine.



First contact

Whenever you switch on your Amiga you always get the same picture – a hand holding a Workbench disk. The number displayed on it is the version number of the machine, not the disk! Version 1.3 is the current standard, although this is updated every few years as Workbench gets better.

You don't always have to insert the Workbench disk at this point. Many disks will start quite happily without using Workbench. Most games do not use Workbench at all. Such disks are protected against Workbench, to prevent people from copying them and giving copies to all their Amiga-owning friends.

If you try using a game disk with Workbench, nine times out of ten Workbench will not be able to even recognise it as an Amiga disk. "Not a DOS disk" is the standard message it will give you. This means the game is 'self-booting' and doesn't need you to put Workbench in first.

But many disks, and the Coverdisk that you will find on the front of every copy of *Amiga Format* is an example, will need the Workbench disk to access programs, thereby cramming more information onto the disk. If you think about it, this is quite logical. If a disk doesn't need Workbench, then it must have some parts of Workbench on it already, or it couldn't work.

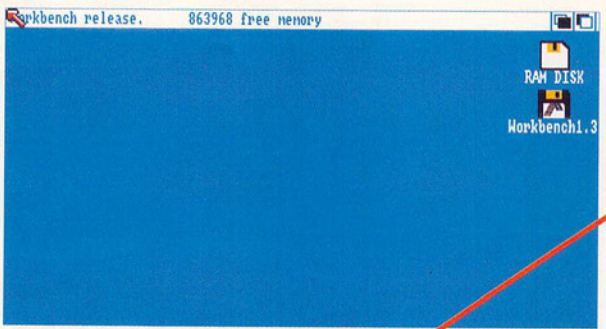
Starting up

Now you have some fundamental principles to go on, it's time to start using the Workbench disk. First, make sure that the disk is 'write protected' – the plastic tab in the corner of the disk should be moved so that you can see through the hole. Nothing can be written onto the disk once this has been done, so you can't do any harm to it.

Assuming that your computer is switched on, insert the Workbench disk and wait for the drive light to go out (a signal that something has finished loading or saving).

While loading, Workbench will display messages on the screen. Don't worry too much about these, as they are more of a list of just what's going on (and a lot of things happen that don't appear in the list).

● Once Workbench has loaded you will be left with a screen something like the one below. Your first sight of Workbench! Boring or what?



Note the memory meter – the thing on the white bar at the top which says '863968 Free memory'. This shows how much of your 1 Megabyte memory is left free after Workbench has loaded in.

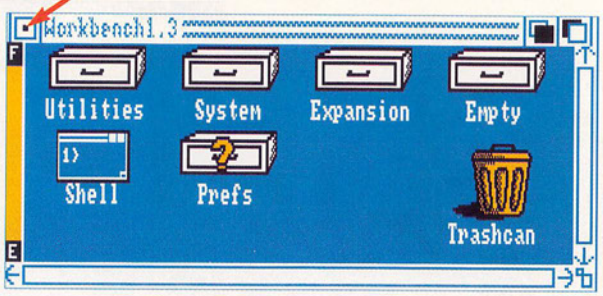
Before starting out to look at the disk, you have to learn a few simple methods. Start off by just moving the mouse. Notice how the arrow on the screen – the 'mouse pointer' – follows wherever the mouse goes.

● Now move the mouse pointer on top of the picture of a disk marked 'Workbench1.3'. Click once with the left mouse button, and notice how the picture changes – its colours reverse, to show you have selected it. These pictures are called icons, by the way.

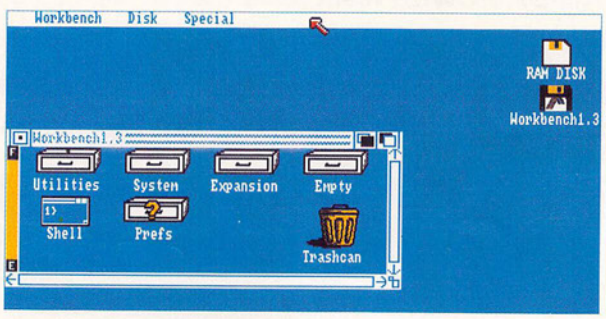


● Now try clicking twice quickly on the same icon, again using the left mouse button. This action is known as 'double-clicking' and doing it sets off whatever the icon does. In this case, a window will open, displaying the contents of the Workbench disk. It should look like the picture below: but note we've cut out the rest of the blank Workbench screen, leaving just the open window.

To get rid of the window, just click once in this box at the top left-hand corner. Again, this is a standard procedure which you should soon get used to. It's called simply 'closing a window'.



● That's the left-hand mouse button sussed, so how about the right-hand button? This is used for one special purpose – to display any available menus. A menu is simply a list of options, a bit like a menu in a restaurant. If you press the right-hand button momentarily, you will notice three words appear at the top left of the screen: 'Workbench', 'Disk' and 'Special'. Holding the button down will keep the words there.



disk for?"
getting into Lemmings..."

bench

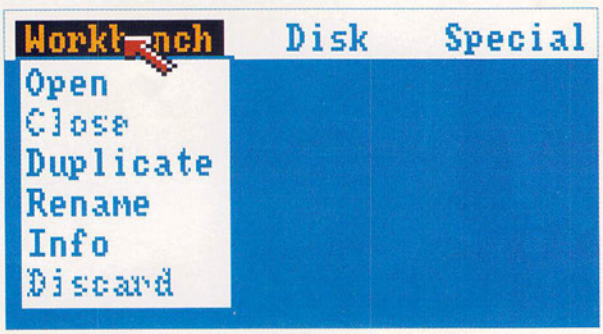
Amiga, allowing
which are not
Workbench
on how to
an explanation
with Workbench



Pat McDonald, Technical Editor, heavy metal fan, role-playing fiend and part-time Civil War cannon fodder is the man who makes Workbench buzz with the best in tips and advice every month.

● To look at the menus, move the pointer (using the mouse) to the top left of the screen, and keep the right-hand button pressed. Don't let go of the mouse button just yet!

Notice how the menus drop down, and how moving the arrow to the left or right makes a different menu appear. Try moving the mouse down over the menu – notice how the different options are darker when the mouse pointer is over them – they are 'selected' – and also how some are faint or 'ghosted out'. But do keep that button pressed for now!

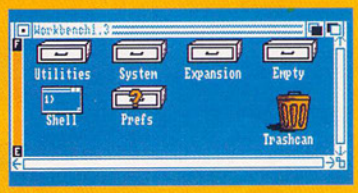


Those 'ghosted' options, like 'Close' and 'Discard' here, are not available. That's not to say that they are never available, just that at this particular moment you can't use them.

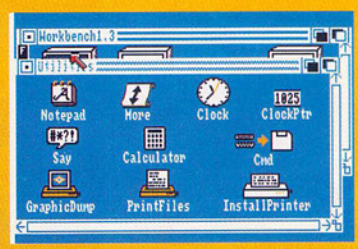
Move the pointer away from the menus and let go of the mouse button. If you had let go of the mouse button over a selected (darkened) option, you would have chosen it. Nothing wrong with that, and we'll return to the menus later, but for the minute you should just explore.

Take note that these methods – moving the pointer with the mouse, clicking with the left button on icons and the right button for menus – are used by the vast majority of non-games programs. Dead useful.

MORE ABOUT ICONS



● Now move the pointer back to the icon marked Workbench1.3. Double-click again with the left mouse button – again the window will open. Notice the vertical bar on the left. At one end you have an "f" for full, and at the other an "e" for empty. The height of the bar tells you how full a disk is: as you can see, there's not much space.



● It's time to explore. Try double-clicking (again with the left button) on the drawer-shaped icon marked 'Utilities'. Another window opens, overlapping the first. You'll see lots more icons with names like Clock, More, Graphicdump and so on. For this starter attempt, move the pointer to the Calculator and double-click (remember, you double-click with the left button to make an icon work).



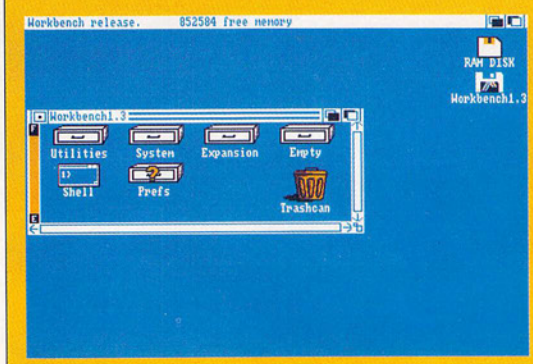
● Another window will pop up, and it looks a lot like a normal electronic calculator. It is slightly different though – you don't use the computer keyboard to enter figures, you use the mouse instead.

Try it out – enter the numbers by moving the mouse pointer to them and clicking with the left button. Then click on the symbol (+ for plus and all that), enter a second number and finally click on the = (equals) button. Simple isn't it?

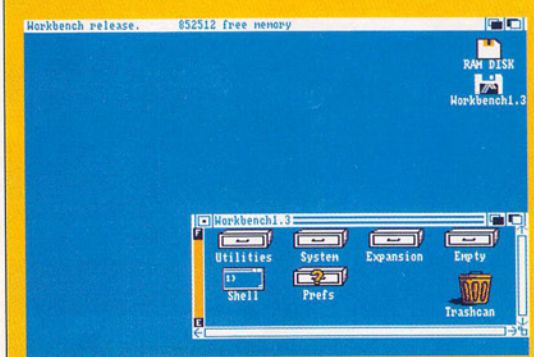
You will notice that some of the symbols are different. An asterisk is used for multiplying (*) and a slash for dividing (/). This is common to most computers, not just the Amiga. Similarly, the figure zero has a slash through it (Ø), to avoid confusion with a capital letter O.

After you've had a play, you'll no doubt want to see more. To get rid of the Calculator, click with the left button in the box at the top left corner of the calculator just as you did to get rid of a window before.

● The positions of icons are not set in stone. Move the pointer to an icon, press the left button and hold it down. Move the pointer – the icon follows it! This is known as click and drag, moving icons to where you want them. Let go of the button to drop it where you want it.



The same is true of windows, but you have to drag these by the bar at the top. You want to put this window somewhere else?

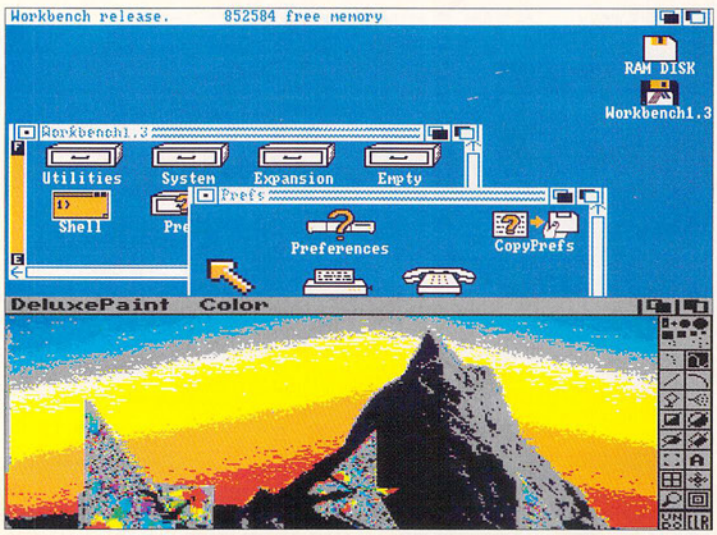


Just click on the top bar with the left button, move the mouse and then let go!

SPLIT PERSONALITY

The Amiga has one dynamic advantage over any other popular computer. From the start, it was designed to 'multitask' – that is, do more than one thing at a time. You can, for instance, load in *Deluxe Paint III* twice, print out a picture with one of them, and while it's printing use the other one to draw more pictures!

A few words of caution, though. Doing more than one thing obviously slows the machine. Also it takes up quite a lot of memory – the above example won't work on a standard 1 Megabyte Amiga. Finally, most games don't do it – they insist on being the only program running. Then again, you can't really play more than one game at a time...



HEART OF THE MACHINE



ABOVE: The Shell is an alternative to Workbench. Double-click on this icon to get it going.

LEFT: Any program that you run from Workbench runs in its own screen, and you can drag the whole screen down to reveal the Workbench again if you want to.

How do you get into the system, to change and alter things? Workbench has a program called Shell which is used to make the Amiga do things directly through the keyboard, like old-fashioned computers had to, rather than the friendly pictures-and-mouse system of Workbench. It's also known as the CLI, which means Command Line Interface: a term derived from those older computers. The Shell is a precision tool for tweaking your system. Although it's fairly easy to experiment with, you are strongly advised to experiment with a back-up or test disk. The Shell is powerful, and can seriously mess up your disks if used badly.

A good example of using the Shell is setting up a disk to work automatically (one that doesn't need Workbench). Doing this just with Workbench is simply impossible – you have to dig deep and understand the Amiga well before you can do it.

MORE ABOUT MENUS

Now that you understand how to set programs going, it's time to delve a little deeper. First, let's start all over again.

Check that the drive light is not lit. Press the key marked CTRL and the two keys either side of the spacebar. This is how you 'Reset' the machine: that is, start it off from scratch again without switching it off. Some people call it Control-Amiga-Amiga after the keys, or the "Vulcan nerve death grip".

Notice that because you left the Workbench disk in the floppy disk drive, the computer starts loading it again straight away – you don't see the hand holding a disk, because a disk is already there. The hand holding a disk picture is a 'prompt', asking you to put a disk in, but it doesn't need to ask if you've already got a disk in.

Also note that this Reset idea isn't quite as good as turning the machine off and then on again – some parts of the Amiga's memory are not erased. This can make odd things happen with some programs, but not often.

Don't use Reset if the computer is writing something to the disk – the disk will be corrupted. Always check the drive light first.



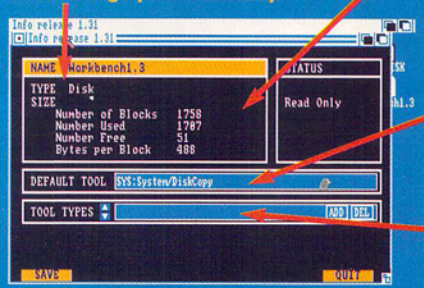
● When the Workbench icon appears, select it (by moving the pointer to it and clicking once with the left button). Next, hold down the right button, and move the pointer to the top left of the screen. Move it down the Workbench menu until the 'Info' option is selected (darkened, remember?). Let go of the right button.

DISK: There are five different types of icon: Disks, Drawers, Tools (programs), Projects (data – for instance pictures) and Garbage (the Trashcan).

NUMBER OF BLOCKS ETC: This area isn't used by all icons, but in the case of disks you can see how big a disk normally is, how much is used and unused and how many bytes (characters) there are per block. Use the Calculator to work out exactly how many characters you can store on a disk (1758 multiplied by 488).

DEFAULT TOOL: This is the program with which the icon will work automatically – in this case, the Diskcopy program, which is used for copying disks (obvious really).

TOOL TYPES: The tool types are used to 'tweak' some software – for instance, to turn AutoGrid on automatically when you start up *Deluxe Paint III*, or the Interlace (flickery high resolution) graphics mode on or off in some word processors. Notice the arrows – these are for moving between different tool types if more than one is available.



You will now see a screen appear like the one above. The Info screen gives information about icons. First, it gives the type of icon – Workbench is a floppy disk, so the system refers to it as a Disk. Next, it gives how many blocks the disk has, how many are used and how many free (unused – not much because the disk is full) and how many bytes per block there are.

Very interesting, but how do you get back? Notice in the bottom left corner of the screen, a button marked 'Quit'. Clicking on this with the left mouse button gets you back without changing anything – a method used by hundreds and hundreds of programs. Sometimes it's called 'Cancel' or 'Forget it', but the idea is the same – "Oops! I made a mistake and I want to leave things as they were". Click on it now.



That's really all there is to it when using the menus. Click once on an icon with the left button, and select the menu option with the right button. What do the other menus do?



● On the first, the 'Workbench' menu, both the 'Open' and 'Close' options are pretty redundant. 'Open' is just like double-clicking on an icon, and 'Close' is like clicking in the box at the top left corner of a window, to get rid of it. 'Duplicate' is to make a copy of an icon – handy for making copies of disks. 'Rename' changes the name of an icon, and 'Discard' gets rid of icons. Don't use Discard – it's been known to do nasty things,

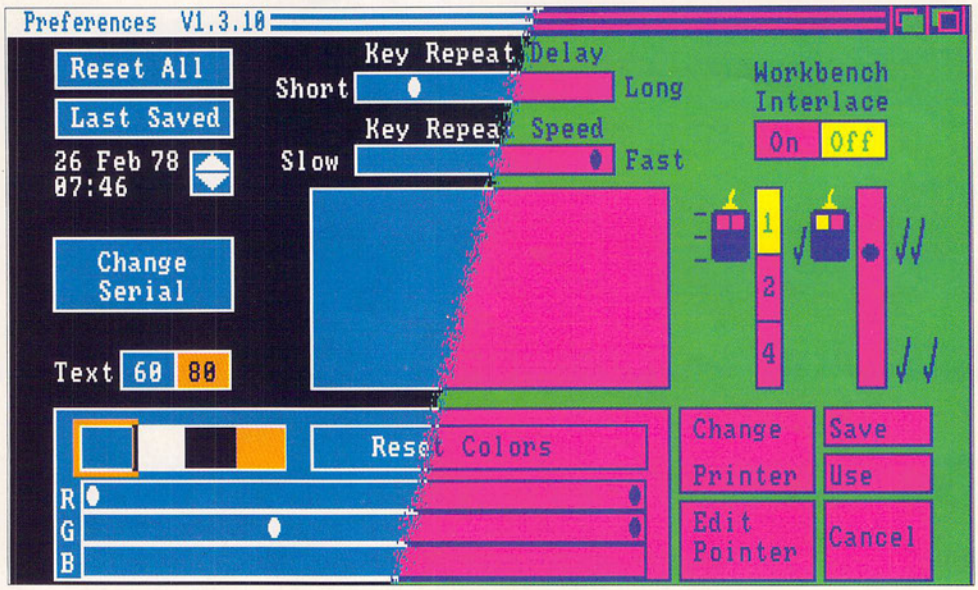
DON'T LIKE THE COLOUR?

How do you change basic things on the Amiga, like the colours of the screen or the shape of the mouse pointer? Well, it's actually very easy, and rather fun to play with.

There is an icon marked 'Preferences' on the Workbench disk. Clicking on this brings up the Preferences screen. Notice the four blocks of colour in the corner – click on the colour that you want to change, and adjust it with the sliders to tune the amount of red, green and blue. You can make any colour you want this way.

You could try finding out what all the different parts of Preferences do. Changing the mouse pointer, setting the clock to the right time, controlling how far you have to move the mouse to make the pointer cross the screen – Preferences does the lot.

If you want to cancel your changes, just click on the 'Cancel' icon. The 'Save' option will permanently record the changes onto the disk – try the 'Use' option first, to try them out and see if you like them without setting them permanently.



If you really want to work on a pukey horrible-coloured Workbench, there's nothing to stop you. Set whatever colours you want from the Preferences screen.

WE CAN HELP YOU EVERY MONTH!

Help! I've got a problem and none of the above tells me the answer! Don't worry. Every month in *Amiga Format*, there is a question and answer column designed to provide help with all aspects of the Amiga and it's called... Workbench! Buy the magazine and write in.

MORE ABOUT MENUS

and there is a quicker way to do it. You may have noticed the little waste basket icon, marked 'Trashcan'. This is used to get rid of unwanted icons, but they are not scrubbed automatically. You can click on the 'Trashcan' to see what's in it, and move it out again, by dragging it as described before.

● The next part is just theory: getting rid of icons that you have put in the Trashcan. It's very easy, just select the Trashcan icon, press and hold the right button, move the pointer to the menu marked 'Disk', and let go of the button when 'Empty Trash' is highlighted. The Trashcan gets cleaned out, deleting the icons on the disk that you don't want.



● You may have noticed another item on this menu – it's marked 'Initialise'. Use it with caution. It's for blanking disks, or 'formatting' them as computer people say. When you buy blank disks (and you'll need them for making copies of important disks like Workbench) they are not set up for any one type of computer. Formatting them will make them usable with the Amiga.



● The last menu, the 'Special' menu is best explored by yourself. Don't be afraid of any of the options – none of them do unpleasant things like "Discard" or "Initialise". One thing you may find very useful on this menu is the 'Snapshot' option, used to tidy up icons.

Drag the icons and put them all where you want them. Now select one of them so it's highlighted. Then hold down the Shift key and you will find you can select any amount of other icons too.

Select every one in the drawer, then choose the Snapshot option. You will now find that the drawer remembers the position of the icons when you close it and open it again.



MAKING A BACKUP



It's very simple to make a copy of Workbench, or many other disks. Double-click with the left mouse button on the Shell icon. Wait until the "SYS: >" prompt appears, and then type:

```
Diskcopy From Df0: to Df0:
```

Don't worry about capitals or little letters, just concentrate on getting the numbers (DF Zero, not the letter O) and punctuation in the right place.

Press the Return key, and the computer will ask you for the source disk (where the copy is coming from) and the destination disk (the blank one where it's going to) automatically. Press Return to continue between the steps. The Shell isn't too bad, is it?

WORKBENCH PROBLEM

Workbench has one flaw. Every time you want to do something with a different disk, you put that disk in to do it. But then the computer needs to look at the Workbench disk again, to find out how to do it. In short, you end up swapping the two floppy disks about like crazy!

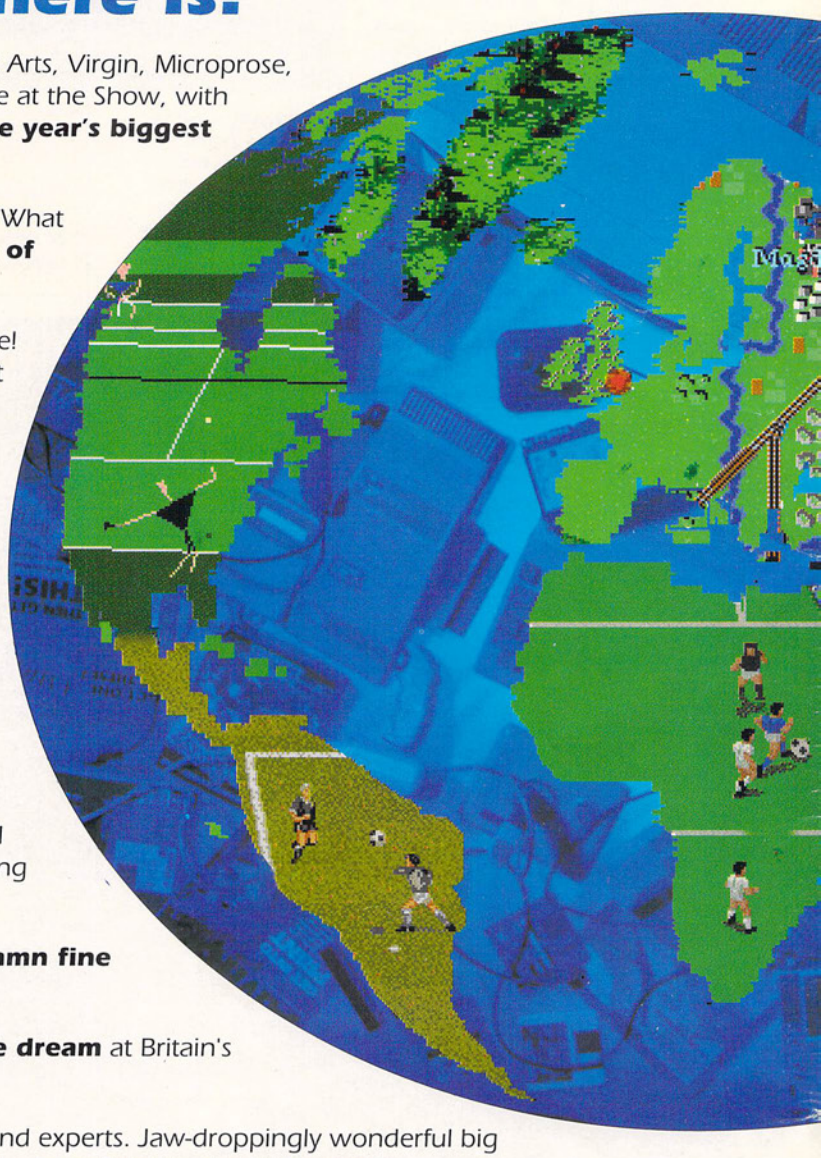
How do you get around this? The ideal solution is to have more than one disk drive. It doesn't matter if the extra drive is floppy or hard – so long as Workbench is always available, the machine can find all the information it needs. See 'Making the Connection' on Pages 40-41 to find out about disk drives.



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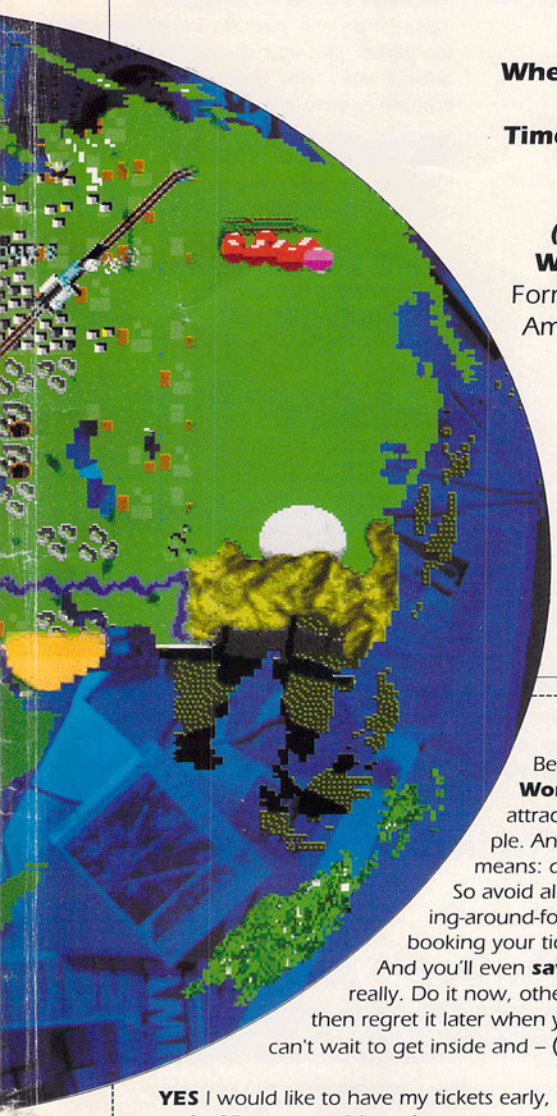




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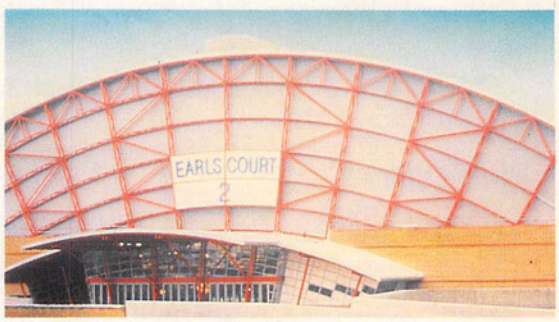
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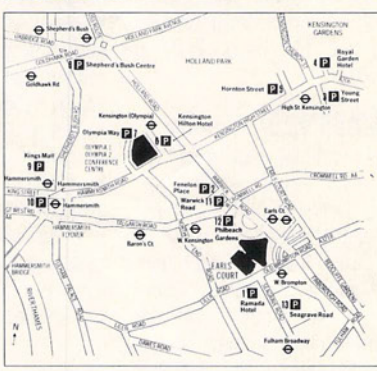


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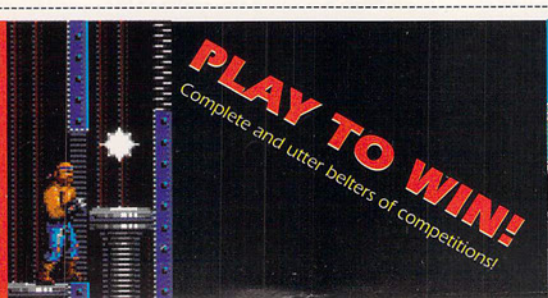
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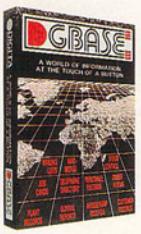
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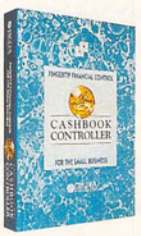


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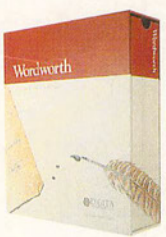


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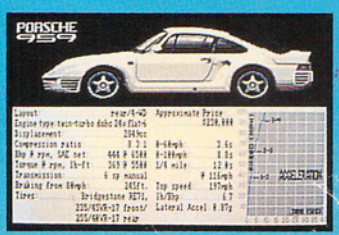
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